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**SKEPTIC'S
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SKEPTIC'S QUEST

by

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*Living Religion, The Science of Social
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Family, Newspapers and
the News, etc.*

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TO THOSE COURAGEOUS SKEPTICS—
AT COLLEGES, AMONG RELIGIOUS LEADERS,
AND IN MY OWN FAMILY—
WHO HAVE HELPED FORGE OUT BASIC IDEAS
IN THIS ADVENTURE

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PART I

On the Brink of a Volcano

THE SUN HAD not yet risen, but the dawn had begun from beyond the eastern horizon of the Pacific. To the west, the ocean still lay shrouded in the shadows of the night. Between these two sweeps of sea the jagged cone of the volcanic mountain thrust itself toward the sky. On the highest lip of the crater, overlooking the sea to east, west and south, a space of level ground hardly larger than the porch of a spacious house had been roofed over. A bench, hewn from the rock, surrounded its outer sides. The northern edge of this piazza was guarded with an iron railing. By leaning over the rail, one could look directly down, some hundreds of feet, into the cauldron of boiling lava. The crater was still full of night, but one could see, out of the deep shadows, the black lips of lava purse themselves into grimaces, and break into hot, red laughs, only to sink again into darkness.

Seated on the western bench, looking out into the dawn, was a Thinker. As he was drinking in the early glory of the new day, he heard impetuous steps ascending the path. With panting breath, a Student burst into the piazza, strode over to the crater edge without looking at the Thinker, raised a foot to the lower railing, and stood looking down at the seething lava far below.

"You contemplate leaping in," remarked the Thinker.

The Student looked around, startled to discover that he was not alone, and still more startled at the words. "How did you know?" he asked.

"I too have entertained such impulses at various times in years past," was the reply.

"Well, why not 'shuffle off this mortal coil'?"

"... perchance to dream:—ay, there's the rub!"

"You mean, I might go on being conscious after my body

was burned to cinders in that molten lava? That I'd still be alive in some kind of spirit world? I'll take a chance on that! I'm skeptical about all that spiritualistic stuff!"

"There's a kind of irreversible finality about death. What makes you so sure you don't want to finish out your adventure with that body of yours?" the Thinker explored.

"Girls, for one thing," explained the Student. "I'm engaged to be married to one back in the States—fine, straight, innocent, idealistic kind of kid, she is. But there's a girl in the party—down on the ship, you know—who is just female—good-looking, peppy, empty-headed. She and I have been—well, anyhow, I'm sick of the whole business."

"Conscience bothering you?"

"Conscience? That's just your idea about what other people think of you. I've graduated from all that. There aren't any rules about ethics that mean anything. Bertrand Russell says so. He says that those questions lie wholly outside the domain of knowledge. He says science can't say anything about ethics, because science is concerned with what is true and false. And he shows that science is the only method there is for arriving at truth. I guess that pretty nearly settles the question!"

"But you love that girl, back in the States?"

"Well yes, in a way I do. But this sex business is just physiology. I like the excitement of it! But it's worn down my battery or something. I feel low this morning—so low I could jump over that railing with a cheer. Gosh, it would be good to plunge into blackness, forever!"

"You do not think there might be something spiritual about love—something——"

"Spiritual? No—I'm skeptical about all that spiritual business—it's so intangible—it's all subjective."

"But there are some real values in life, are there not—beauty, loyalty, cour—"

"Values? I'm skeptical about all that subjective stuff. Who ever had a value in a test tube? Seeing's believing. I never saw a photograph of a value. I never got one under a microscope. I never touched a value with my hands. All I know anything about is matter and motion—like that lava down there, and the way it flows, and flames, and boils!"

"You might, perhaps, care to live on for the sake of those who love you."

"Well, I'd hate to hurt them. But I haven't any obligation to them. Obligation is one of those subjective ethical ideas. Besides, I'm not responsible for my actions!"

"You mean you're insane?"

"No—of course not that. I'm no more insane than you are. You're not responsible either. None of us is. I'm a strict determinist."

"You think there is no difference between a prisoner and a free man—no difference between accidental homicide and murder?" the Thinker interrogated.

"I'm skeptical about all that free-will stuff," the Student insisted. "What I do is just a matter of the conditioning I had when I was a youngster, the amount of sugar and of adrenalin in my blood, the words you happen to stimulate me with, and that sort of thing."

"There is something else troubling you besides girls, is there not?" asked the Thinker. Silence came down over the youth. He picked up a stone and shied it into the crater, watching its slow parabola, and the way in which the lava raised its lips to meet it, like a dog snapping at a morsel of meat. Then he answered.

"My grandmother left me a thousand dollars. She hoped I'd use it to study for the ministry, or something like that. Some of the fellows and I got to studying the stock market in our statistics seminar. We made up a system to beat the market by science. It was all based on correlation coefficients and standard deviations. You needn't smile—it was a swell system!"

"Oh, I wasn't smiling at you," the Thinker ruminated. "I was just remembering how I lost a thousand dollars in the cotton market on a scientific scheme which I worked out myself. What happened to your legacy?"

"Dropped every cent of it! Funny how that kind of thing can obsess you. It's almost as if it were a kind of dope. I was treasurer of my fraternity. Had a thousand on hand when the broker called for more margin. I was on the brink of using that frat money to cover with. And then some quixotic impulse held me back. I told him to sell us out. And next day the market

rebounded. We'd have cleaned up! I wouldn't have cared so much only the two fellows that went in with me lost their money too, and one of them couldn't afford it—his father is a steel worker."

During the early part of this conversation three men had come up the path onto the piazza, and had gone to the railing to look into the crater. They seemed to recognize the Student, though he took no notice of them. His rejoinders to the Thinker were so emphatic that no one on the piazza could well ignore them, and the three men, though at first pretending not to hear, had become more and more obviously interested in the conversation.

The grinding of gravel now announced the approach of two hurried newcomers. They burst in and seized hold on the Student. "Thought maybe you'd done that fool thing you were talking about last night!" "What do you want to give us such a fright for?"

"These are the two fellows I was just telling you about," the Student explained to the Thinker. "This is Merchantson, and this is Workerson. Fellows, this is a gentleman who has delayed the execution of my execution. I was just telling him about our flier in the stock market."

"Maybe you each had your money's worth of experience out of it," the Thinker suggested.

"For what?" Merchantson rejoined. "Why should I learn how to finance more skyscrapers, more assembly belts, more machines to put more men out of work, to turn out more gadgets that people haven't purchasing power to buy? Even if they could buy them, what's the use? Are the faces in the New York subways any happier than the faces in Eskimo igloos?"

"I'll tell you one thing," the Student broke in. "If I was going into business, I'd go after the main chance. Dog eat dog—that's the rule. I'd make my fortune. I'd have my estates and my yachts and my servants, and my face in the newspapers—and I'll bet I'd feel terrible most of the time!"

"You've got mental indigestion!" snorted Workerson. "Just forget all that, roll up your sleeves, and get to work on this revolution that's going to give us a brand new world."

Merchantson turned on Workerson: "You're aiming to get more power for labor, so workingmen's families can have a higher standard of living. And most likely everything you try to do just balls things up still worse in industry, so that everybody will be poorer and more miserable. There just isn't any sense in the whole business!"

"You'd like to see us go back to the university and take Ph.D.'s, maybe?" the Student pursued, turning upon the Thinker. "Degrees for what? To write theses about dead men's ideas? To master the principles of advertising, so as to know how to sell people things they don't need by playing on their inferiority complexes? To get to be an expert chemist, and perfect higher and higher explosives, and poison gases better and better adapted to choke babies to death? If I were going on living, I'd want something to believe—some ground to stand on. I don't want life to be so stupid, so silly!" The Student stopped, seeming for the first time to notice the three men who had entered the piazza some time before, and who were standing back of the Thinker.

"But you have a kind of a philosophy, haven't you?" the Thinker prompted.

"Yes, I'm a materialist—a mechanistic materialist. Here, I wrote out a summary of it for one of my seminars, and I have it in my pocket. Perhaps you'd like to hear it?"

Creed of a Mechanistic Materialist

1. The tests of reality are touch, sight, and experimental verification.

2. The most real part of me is my body. I did not exist before my body was conceived, and when it dies I shall cease to exist.

3. Consciousness, and all that makes the human mind, can be reduced to physics and chemistry. Biology is nothing more than matter and motion. Thought is nothing more than electricity.

4. You can prove some things by mathematics, by laboratory experiments, and by rigorous field investigation. Such things make up science. All else is superstition, or, at best, vague, wishful, and uncertain.

5. Before the Age of Science, most of human thinking was superstition, or crude rule-of-thumb; it is a mistake to pay too much attention to it.

6. Religion is an opiate, a flight from reality.

7. Progress is a delusion. The universe is running down: sooner or later the earth and the solar system will get too cold for human life.

8. The important objectives are to gratify bodily appetites and to get thrills, money, and power. This power must be backed, ultimately, by physical force.

9. Look out for the main chance. It pays to be decent and far-sighted, but the ultimate test of what's worth doing is, what tangible results do I get out of it?

"You worked out that philosophy at college?" the Thinker inquired.

"College!" burst out the Student, picking up the cue but ignoring the question. "College is a great place! You study history and literature to learn all about the heritage of the past. Then you study military science to find out all about how to destroy that heritage, and leave nothing but ruins to posterity!"

"Then you do care something about posterity?"

"Posterity?—say, listen to this! I copied it out of a book in the library. It's by Bertrand Russell:

That man is the product of causes which had no provision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and his beliefs, are but the outcome of accidental collocations of atoms; that no fire, no heroism, no intensity of thought and feeling, can preserve an individual beyond the grave; that all the labors of the ages, all the devotion, all the aspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system, and that the whole temple of man's achievement must inevitably be buried beneath the débris of a universe in ruins—all these things, if not quite beyond dispute, are yet so nearly certain, that no philosophy which rejects them can hope to stand. Only within the scaffolding of these truths; only on the firm foundation of unyielding despair; can the soul's habitation henceforth be safely built.

"That's what Bertrand Russell says. But I say the whole universe is just a chaos—just an accident. It doesn't mean a thing!"

Chaos in a Patternful Universe

"CHAOS?" CHALLENGED a voice from behind the Thinker. "I should say that we live in a universe permeated with organization!"

"This is our professor of mathematics and astronomy," explained the Student to the Thinker. "You see, we fellows belong to a travelling university. That's our ship down there in the bay. This man with the red beard is professor of physics and chemistry. The one with the horn-rimmed glasses is professor of botany and zoology."

The Astronomer went on: "Last night I saw one of you light a match, out on deck under the stars. How far did the light of that match travel?"

"Not very far, I reckon—a twentieth of a cent's worth of match light!" ventured Merchantson.

"In ten minutes, that tiny ripple of light had travelled over one hundred million miles. By this time, it is far out beyond the boundaries of the solar system. A million years from now infinitesimal remnants of that match-light wave will be breaking on spheres inconceivably distant from the earth. Do you call the universe in which that can happen a chaos?"

"I call it rather silly!" exploded Merchantson. "I strike a twenty-for-a-cent match, and the ripples go on for millions of years!"

"Not so silly. What would happen to you if the light of the sun stopped hurtling through space to the earth?" the Astronomer persisted.

"Oh, the light keeps coming," Workerson broke in. "Yesterday it killed perhaps some scores of men from sunstroke. And at the same time thousands and thousands of kids in the slums were dying slowly for lack of enough sunshine. Do you call that rational?"

"Rational?" retorted the Astronomer. "Did you ever study the mathematics of ellipses?"

"You mean those dragged-out circles that you draw by putting a loose loop of string over two separate pegs on a blackboard, and swinging the chalk around inside the loop—like a race track?"

"That comes in conic sections, doesn't it?" the Student asked.

The Astronomer assented, and went on: "Would you say that conic sections were a discovery or an invention? Did man make it up, or did he find it existing in nature?"

"The old Greeks figured it out in their heads," asserted the Student confidently. "There never was a perfect ellipse in nature. A curved line is a purely imaginary idea. Diagrams and machine motions are just crude approximations to the curves of the mathematician."

"Good! How then do you account for the fact that the earth and the other planets follow ellipses in their paths around the sun?"

"Do they? I thought there were all kinds of perturbations, or whatever you call them."

"Even the deviations from the ellipses conform approximately to Newton's man-made mathematics, and they fit even more closely to Einstein's man-made equations. How do you account for that?"

"Oh, it's obvious," retorted Workerson rather irritably. "It's the nature of things to act that way. You mathematicians just describe the way things work out when mechanical units are combined together."

"Then you hold that man's mind has grown up as a reflection of the organization which permeates the universe?"

"Wait a bit!" broke in Merchantson. "You think this universe is so rational and so well organized. Well, how about that meteorite that landed in Siberia about thirty years ago, and devastated hundreds of miles of territory? Kind of chaotic, that, wasn't it? And how do we know that a meteorite as big as the earth won't smash into us one of these days and just obliterate all the organization that anybody cares a rap about?"

"You have been talking about the universe as studied through a telescope," broke in a new voice. "Why not ap-

proach the question for a while from a standpoint beyond the microscope?" The group turned to listen to the Physicist. "What are the ultimate particles of matter?" he asked them.

"Electrons and protons," promptly responded the Student.

"And neutrons, positrons and some more kinds of '-trons,'" added Merchantson.

"Are they particles of matter?"

"Well, strictly not, I suppose. An electron is a negative unit of electricity, and a proton is a positive unit."

"What is the basic characteristic of these ultimate electrical charges?"

"They organize into atoms, if that's what you mean," guessed the Student.

"Take one proton." The Physicist held up his fist. "Let one electron revolve around it." He circled a forefinger around his fist. "There you have an atom of hydrogen, the lightest of all chemical elements. But, suppose you have eight electrons, revolving around their nucleus: that makes an atom of oxygen. The electrons in oxygen are just like the electron in hydrogen, and the protons in oxygen are just like the proton in hydrogen. It is merely the organization that is different. You cannot live ten minutes without continuing breaths of oxygen. But, suppose you have thirty-three electrons revolving around an appropriate nucleus: then you have a deadly poison—arsenic. If ninety-two electrons are revolving around their nucleus, the result is an atom of the heaviest of the spontaneous chemical elements—uranium. The other elements come at intermediate points in the same series. From a chemical standpoint, the universe consists of energy, organized mathematically into patterns."

"Aren't you oversimplifyfing the thing?" objected the Astronomer. "That solar-system idea of the structure of an atom is rather out of date, is it not?"

"All right. Forget the fist-and-finger diagram. I am concerned simply to show that what we call atoms are really made up of units of electric energy, that a basic characteristic of these units is their tendency to organize with each other, and that the patterns of their organization conform to principles worked out by man in his higher mathematics."

"I suppose you'll go on to demonstrate that atoms insist upon organizing with other kinds of atoms to form molecules," anticipated the Student.

"Not always. Gold atoms, for example, are markedly clanish: they stick pretty much by themselves, with others of their kind."

"Snooty gold!" commented Workerson.

"Some of the other elements also are slow to combine chemically. But even these individualists among the atoms do tie up at times in molecular organization, and most of the elements are found in nature only in combination with other elements. One of the simplest of molecules is that of our familiar friend, water, and molecular organization ranges all the way up to the extreme complexity of the protein molecules from which our bodily organs are largely built."

"A youthful chemist took a drink,

Alas, he'll drink no more,

For what he took for H_2O

Was H_2SO_4 ," chanted Merchantson.

"And what's the next step in the organizing process?" the Student inquired.

"Crystals!" announced the Physicist. His face lit up with the glow of an enthusiast. "It's a bit out of my special field, but if you care to come down to the ship, I have some photographs of snow crystals that I'd like to show you. They certainly illustrate this organizing process in a spectacular way."

"That sun is getting a bit hot," assented the Student. "Snow crystals would be a most welcome topic," the Biologist agreed, mopping his brow. The others nodded; the group descended from the crater edge to the shore, and were ferried out to the steamer. Quite a company of other students and professors joined them as the Physicist led them to a darkened room, where a stereopticon had been set up. There he began a little lecture on his hobby:

"When water molecules are left undisturbed in the upper air, with the right degree of closeness to one another, and the proper conditions of freezing temperature, they begin to arrange themselves in intricate geometric patterns. Since a molecule of water is made up of two atoms of hydrogen and one of oxygen,

arranged in a triangle, the crystals are based largely on equilateral triangles and hexagons.

"The first slide shows four varieties of crystals, classified empirically. Although billions of these snow crystals fall every winter, it is extremely unlikely that any two of them should be exactly identical."

"What produces the designs?" asked the Student.

"Looks like intelligence to me," volunteered Merchantson.

"Those lacy patterns look as if a woman had crocheted them!"

"As the structure grows," the Physicist observed, "there are twelve different points at which molecules are adding themselves coordinately. To illustrate, here is a slide showing a whole crystal, and then, alongside it, the same crystal divided into twelve parts, six approximately identical, and six others which are approximate mirror-images of the first six. But as to the causes of this amazing patternfulness we are still very much in the dark. All I feel prepared to say at the present stage is that snow crystals illustrate spectacularly the organizing process as it moves on into relations between molecules."

"Some interesting analogies there, between snow crystal symmetries and symmetries in ferns, tulips, starfish, and the two sides of a human embryo," mused the Biologist.

"Where does all this take us on the problem we started at—the meaning of life, and whether it has any sense or is just a chaos?" insisted the Student.

"We live in a universe that is permeated with organization," the Physicist reiterated. "Electrons and protons organize into atoms; atoms organize into molecules; molecules organize into crystals."

"And where does that get you? Most of your snow crystals are hardly formed before they start to melt down again into water. Not one in a billion ever has its beauty appreciated. Your protein molecules get organized, only to rot into bad smells, poisonous liquids, and at last, dust. I still say it's a silly chaos. I don't see any real significance in it!"

"Hush!" scoffed Workerson. "Maybe if labor union organizers understood snow crystals better, steel laborers would have steady work, and their babies would have milk to drink!"

"Maybe they would!" agreed the Thinker soberly.

Organization Marches Forward

THE PHYSICIST HAD put away his slides, and the little group had moved out into the library cabin of the ship, where easy chairs were available. As soon as they were settled the Biologist spoke up.

"Aren't you cynics stopping a bit early in your survey of the organizing processes of the cosmos?" he objected. "In the physicist's universe, energy is running down. In the inorganic chemist's universe, atoms combine into molecules and then separate, without seeming to get much of anywhere. But in the biologist's world, the organizing process is going forward rather tremendously."

"Prove it!" the Student challenged.

"All right: take this one fact—there was a time in the development of our earth when a single-celled animal was the highest form of organization ever achieved."

"What does that prove?" Merchantson demanded.

"Are you a single-celled animal?" the Biologist retorted. "You have several billion cells cooperating rather marvelously in that body of yours. Something must have happened since the single cell was the apex of evolution."

"You start with the single cell then, do you?" inquired the Student. "Is that where life began?"

"Where life began is a much disputed point," admitted the Biologist. "One of the more complicated protein molecules acts in a way curiously like independent life. It is the molecule of tobacco mosaic virus. Each of these molecules has in it about 50,000 atoms of carbon, hydrogen and oxygen, arranged in very definite geometrical relations to each other. Of course even this huge molecule is much too small to be seen singly with a microscope. It will even pass through the wall of the finest porcelain filter. When these molecules are brought together

in pure masses, they form into threadlike crystals. Once inside the walls of a living cell that supplies them with a suitable environment, these virus molecules have the strange power to cause the substance of that cell to reconstitute its chemical structure until it has become identical with the virus. By this means, the virus molecules are able to reproduce and increase their number a million-fold in a few days. Other disease viruses (like those of measles, mumps, smallpox, rabies, common colds, influenza, and yellow fever) have this power to reproduce their molecules out of the stuff of human body cells. John J. O'Neill says that the way these reproduce themselves out of other molecules is much as if a complicated structure like a typewriter were placed in a warehouse filled with stores of metal and other supplies, and thereupon, spontaneously, duplicate typewriters began to shape themselves out of the raw materials with no other cause except the presence of the typewriter."

"That's a malignant kind of organizing process," the Student pointed out, "—types of molecules that only have to get started in a body, and they turn the materials of that body into enemies like themselves."

"Like labor union organizers getting started among the workers in a factory," suggested Merchantson, with a grin toward Workerson.

"Curiously enough," responded the Biologist, "when a poison like that gets started, the body not only provides materials for multiplied attackers, but it also begins creating defenders, called antibodies. The thing that happens in the body tissues has been likened to this situation: A criminal enters a house intent on murder. He is required to see his image in a mirror. As he does so, the image in the mirror is materialized out of substance in the room, and comes to life with just the opposite purposes to those of the attacker. The defender functions as a policeman who successfully attacks the criminal. Chemically, the antibody is the mirror-image of the enemy molecule."

"A little while back," Merchantson reminded the Biologist, "you were talking about that big jump between the single-celled animal and the human animal. How do you bridge the gap?"

The Biologist responded with all the enthusiasm of a hydrant which has just been thrown open: "Molecules organize into single-celled animals, like the amoeba and the paramecium. We call them Protozoa. There must have been a time in the history of our earth when single-celled organisms like these were the most complex forms of cooperation to which electrons and protons had ever attained."

"How do you know there were any single-celled animals back in the ages before higher animals developed?" asked Workerson skeptically.

"Some of them produced shells, which are found in geological strata more ancient than those which contain any higher forms of fossils," was the answer.

"Some of these single-celled living things were rugged individualists. The amoeba is a lone wolf. In his search for food, he thrusts out part of his body into a sort of foot, then flows the rest of his body into the extended part. When he encounters an edible particle, he wraps himself around it and digests it. When he grows too far beyond normal size, he divides (rather elaborately) into two, and each part separately thereafter pursues its individualistic way. Undoubtedly, the ancestors of amoeba have been doing that kind of thing for hundreds of millions of years.

"But at some stage in the inconceivably remote past, some of the single-celled animals (which we call Protozoa) became gregarious. They began to live together in colonies. We find their modern representatives under our microscopes. Usually each cell in a protozoan colony is self-sufficient, finding and digesting its own food, and fully capable of starting off on a separate life of its own in which it will become the parent of a whole new colony. But this is not always the case. *Eudorina elegans*, for example, is made up of 32 cells, arranged in a regular way inside an egg-shaped mucilage-sheath. When it reproduces, each separate cell divides into 32 sub-cells. Then the wall of the mother-colony dissolves, and each unit begins as a new individual. Although each of the 32 cells in a normal colony of this species seems exactly like the others, no one of them can maintain life apart from the colony. *Eudorina* has a close relative, named *Chlamydomonas angulosa*."

"What?" broke in Workerson.

"*Chlamydomonas*—" the Biologist began.

"Never mind the Latin name; we'll call him Chlamy," suggested Merchantson.

"Well, Chlamy, as you call him, is an individualist—lives by himself, and reproduces by just dividing into two. A single cell from an *Eudorina* colony looks exactly like a Chlamy individual, but the *Eudorina* cannot live apart from the colony until each cell has become a complete colony itself. Now *Eudorina* has another close relative named *Volvox*. These *Volvox* cells live in spherical colonies of 12,000 to 22,000. Some of the cells can move and can eat but cannot reproduce. Other cells cannot move themselves and cannot feed themselves, but can reproduce. They become embryos, which develop inside the sphere until they are ready to start colonies of their own. Division of labor among the cells has thus begun. In *Volvox*, the evolutionary process has started to cross the line which separates a colony from a many-celled organism. These are just a few examples. Over 15,000 different species of Protozoa have been identified."

"You're arguing that this organizing tendency, which we find in electrons, atoms, crystals and molecules, shows up again in cells, and that that accounts for the development of animal organisms," deduced the Student.

"We can hardly claim to have scientific proof for such a conclusion, but I find it difficult to explain the origin of organisms in any other way," the Biologist agreed.

"And then the process goes on up the scale?" the Student pursued.

The Biologist hedged: "Most zoologists would hesitate to say that evolution can be summed up quite so simply as that. But this process of specialization and cooperation of individuals on one level, to form an individual on a higher level of organization, keeps cropping up."

"The other day when I was swimming, I got stung by a Portuguese Man-of-War. Didn't you say something about that being a colony of polyps?" asked the Student.

"You mean that purple bladder floating on the water, with long tentacles dangling below it?" Workerson asked.

"The Portuguese Man-of-War is a colony of animals related to the jellyfish," explained the Biologist. "The various members of the colony are budded off from the float, or bladder, and remain attached to it. There are five different kinds of individuals, with five different kinds of special functions: each colony has one float polyp, with numerous feeding polyps, reproductive polyps, feeling polyps, and fighting polyps."

"Like organs of a body, aren't they?" suggested Merchantson. But the Student broke in: "Say, isn't that like the termites? They have castes, with specialized functions. There's the queen that lays the eggs, and the winged ones that start new colonies, and the workers and the soldiers. Sometimes there are two kinds of soldiers: one kind has pincers to fight with, and the other kind has a sort of funnel-shaped head to squirt repulsive fluid at the enemy. Like organs in a sort of super-organism, aren't they?"

"Yes, but the polyps on a Portuguese Man-of-War are all attached together," objected Workerson. "Why, you might just about as well say that the laborers, and the puddlers, and the derrick men, and the electricians in a steel mill were like organs in a kind of super-organism!"

"You are quite sure that that is a false idea?" the Thinker queried.

"But wait a minute! You're implying that the organs of our bodies came into being originally as specialized colonies of cells, cooperating in a larger colony," objected the Student.

The Biologist thought it over a moment. "I doubt whether my fellow scientists would be ready to accept any such generalisation," he said. "I am simply pointing out that over and over again, on one level after another, this organizing process keeps asserting itself. A unit comes into being—whether that unit is an electron, an atom, a molecule, a cell, a simple organism or a compound organism. Some of the new units are individualists, but some of them are gregarious—they associate with others of their kind. Then specialization and cooperation come into evidence. A new unit, organized out of simpler units, begins to take shape. And as this new type of unit becomes established, it may prove individualistic, or it may show this same fundamental gregariousness, specialization, and coopera-

tion, finding its own fulfillment in becoming a functional part of a more complex organization. You will note that, in the biological field, the individualists stay on their own primitive level of development, while the cooperators become links in an evolution to higher and higher forms of life."

"It looks pretty enough from that side, but look at it this way," objected the Student. "The atom swallows up the electron; the molecule destroys the freedom of its atoms; chemical poisons destroy life; the virus eats into the cell structure; the tentacles of the Man-of-War sting and choke and deliver up to death the small fish that get entangled in them; the warrior termites destroy the ants. Many of the microscopic organisms are able to kill, or paralyze, or disfigure horribly the human body that's supposed to be the apex of evolution. It's slaughter, exploitation, enmity and mutual destruction all along the line."

"And still," the Botanist mused, "you are not a single-celled animal. Your ancestors somehow climbed the long ladder of evolution. There is an upward trend."

"But the capitalist still gobbles up the workman, and the armies still sharpen their teeth and claws to tear each other's bodies into bloody fragments," commented Workerson.

CHAPTER IV

We Are Part of the Patternful Universe

"YOU KEEP TALKING as if human social organization were merely incidental to the process," a new voice objected. "Isn't it really the heart of the problem?"

The Student introduced the new speaker to the Thinker. "This is our professor of sociology and anthropology," he said.

The professor launched right in: "Your examples of the co-operative process interest me keenly. The Biologist spoke of the time when the highest form of life yet attained on the earth was the single cell. There was a time in the pre-history of man when the highest form of political organization yet achieved was the horde."

"Why not say there was a time when the family was the highest form of social organization?" the Student asked.

"You would be going back beyond my province. Chimpanzees live in groups larger than the individual family. The simplest forms of social organization which we find among contemporary human beings, such as the Australian and Central African aborigines, go far beyond mere family groups." He turned to the Biologist. "When would you say that family life began on the earth?"

"Sexual reproduction is found even among many of the single-celled animals," was the reply. "The spherical *Volvox* colonies, with their embryos developing within them, might be regarded as a sort of family affair. But it's a matter of degree. How long does the mother keep the eggs or the young developing within her own body? How long does she tend the eggs after they have been laid, or the young after they have been born or hatched? How much does the male cooperate in the process of protecting, feeding and caring for the young? The answers to these three questions might be used as indices to the degrees of family life. Among the rotifers the male is

merely a sexual machine, with no mouth or stomach, which swims about for a few hours before perishing, and which may or may not succeed in pairing with a female. Among many of the insects, the males have very little function except a sexual one. Among fish and reptiles, the males are usually fully developed animals, but, with few exceptions, their connection with the family is a mere momentary union. The bird mother begins to brood her eggs after they are laid, and to feed the young after they hatch. The male is likely to be called in on that task, as well as on building the nest, so that family life may be said to be well developed among birds. Mammals carry the process still farther. The family life of a beaver colony is fairly advanced. And, if a biologist might make a sociological generalization, the level of civilization attained by man may be measured fairly well by the amount of education and special protection afforded the young, and by the amount of attention paid by the male sex to the welfare of children."

"Then there's no sudden jumping-off place where animal organization stops and human organization begins?" asked the Student.

"None that I can find," the Sociologist agreed. "Human beings have tools, language, and a cultural heritage to degrees far beyond anything that animals possess, but we find rudiments of all these among chimpanzees, and traces of them even among lower animals.

"Political organization is a continuing development from biological colony life. Even on the most primitive known human levels, man, women and children cluster into groups, and begin to specialize in their work. The individual only temporarily and with difficulty can maintain himself independently of his fellows. Families tend to cluster into larger groups, loosely organized, speaking the same language, occupying a common hunting area, and gathering at intervals for religious festivals. As the colonies become larger, and the economic life more complex, specialization and interdependence increase. Medicine men, tool-makers, chieftains, warriors, agriculturalists and the like become differentiated. Definite political organization develops. Religious, military and economic activities are carried on more and more through concerted action, with de-

tailed division of labor. Tribes emerge among men just as naturally as colonies emerge among cells.

"When Columbus discovered America, the Iroquois Indians had already developed a federation of tribes into the beginnings of national life. In Biblical times, the twelve tribes of Israel illustrate the same process. With the coming of agriculture, chieftains built castles and ruled over organized domains. Cities began to grow, ruled over by kings, and defended by armies. In the warfare between these rival leaders, conquests and alliances produced larger and more powerful units. City-states emerged. The process has been repeated over and over again—in ancient Egypt, Babylonia, China and Mexico, and in medieval Italy, France and Japan. The union of city-states produced larger kingdoms. Brilliant conquerors and statesmen achieved empires lasting for generations and sometimes for centuries. Groups of nations, such as the German kingdom, the British Dominions, and the American states, organized into immense modern commonwealths.

"Empires have risen, and empires have fallen. Organization and disintegration have fluctuated backward and forward. But the trend has been unmistakably toward more and more comprehensive political unification. The ancient Empire of Egypt, in its day, was record-breaking in size. Yet, on a modern map of the British Commonwealth of Nations, this same Egypt is one small protectorate."

The Student broke in: "I suppose you're going to tell us that the League of Nations is the great fulfillment of this political organizing process!" Merchantson and Workerson joined in his laugh.

"How long did you say this organizing process had been at work in the world?" the Sociologist asked them.

"Hundreds of millions of years," replied the Student, sober again.

"And the League of Nations—how long has that been in operation?"

"Less than twenty," was the admission.

"And if the organizing process goes on, from electrons to atoms, to molecules, to cells, to organisms, to families, to clans,

to tribes, to nations, and to empires, what do you think is likely to be the next step?"

"Sure, you have bigger and bigger empires," the Student exploded, "and that means bigger and bigger wars. You get bigger and bigger corporations too, and that means bigger and bigger depressions. How many more wars can you have before your whole integrating process goes to smash? How many more depressions can you have before all this cooperation breaks down, and men have to live on roots and acorns again? Maybe the microbes will have the last word after all!"

"What's the use of all this arguing anyway?" demanded Workerson. "We're just contradicting each other all the time."

"Are you sure you are really contradicting each other?" interposed the Thinker. "Tell me, Student, what, among the things which these scientists have been saying, can you agree with?"

The Student was silent for a while. Then he retorted: "Why, I agree with practically everything they've said. They know what they're talking about, I guess. It's what they leave out that makes me mad. They——"

"Just a minute," the Thinker interrupted. "Won't you state briefly the points on which you agree with them?"

"Well, I expect it's true that the universe is based on organization, and that this organizing process builds up, from level to level, from electrons clear up to what ought to have been a real League of Nations, but——"

"Shall we ask the scientists whether they agree with any of the objections you have made?" suggested the Thinker.

"The young men have been emphasizing the disintegrative processes," commented the Astronomer. "Disintegration certainly is pervasive. Every little while some star explodes. The second law of thermodynamics means that the universe is running down, not building up its energy potentials. I know of no guarantee that a giant comet might not destroy human life—or even all life—on the earth."

"From a chemical standpoint," added the Physicist, "disintegration is just as important as integration. Molecules seem to come to pieces just as often as they come together."

"Evolution has certainly involved a keen and ruthless struggle for existence," contributed the Biologist. "Species use other species for food. Sometimes the lower or less complex organisms feed on and destroy the higher. Parasites develop on all levels. But in the life processes of our earth it is untrue to say that integration and disintegration have been equal. Survival often depends upon capacity to cooperate. There is no question whatever that, as geological time has gone on, more and more highly organized animals have been developing and that living things have become more and more able to master their environments."

"These young men are right," said the Sociologist, "when they insist that social conflict and exploitation are pervasive, and when they point out that the complicated economic structures developed by modern man are fragile. They are right to stress the danger of civilizational suicide. But, admitting these things, there is still no doubt that political and economic organization have been increasing for hundreds of thousands of years, and, indeed, that the rate of increase on the whole has been sharply accelerating."

"Just how far are we in agreement as a group, then?" the Thinker asked the Student.

"I guess we all agree that we live in a universe which is built upon and permeated by organization, but which is also permeated by conflict and exploitation," the younger man epitomized. "On the level of physics, the universe seems to be running down; on the level of chemistry it seems to be a standoff; on the level of biology, the increase in organization is obvious; and on the level of sociology, the increase is accelerating. But, on the social level, the danger of catastrophe seems to be colossal."

The Thinker raised a new question: "Why do you talk all the time as if the universe were something apart from yourself—a dead, mechanical stage on which you live out your life?"

"Well, isn't it?"

"What chemicals enter into the composition of the brain?" the Thinker probed.

"Oh, oxygen, hydrogen, carbon, nitrogen, phosphorus, sodium, chlorine, iron—I don't know what else. Why?"

Here the Astronomer broke in: "I was making a chemical analysis of a star cluster at the observatory last winter. You know how we do it—we break up the light from the star with a spectroscope, and identify the chemicals by their lines. Light travels at the rate of 186,000 miles per second, but the light from this nebula had been on its way for more than fifty million years. My spectroscope showed that in that inconceivably distant star cluster, fifty million years ago, there were all these chemicals that you say go to make up your brain!"

"So what?" inquired Workerson.

"They're trying to tell us that when we think, we're using part of the universe to do it with," expositied the Student.

"This evolution that you talk of as if it were something wholly apart—you are immersed in it," the Biologist pursued. "Every one of us, just after we were conceived, was a single-celled animal. You started multiplying by cell division, like an amoeba, only your cells formed a colony and developed into a highly organized foetus. In your blood stream are corpuscles which behave strikingly like single-celled animals. Your body, indeed, is nothing but a highly organized colony of very specialized and interdependent cells, each of which is made up of highly complex molecules, each of which is made up of atoms, which are made up of electrons. At one stage you had gill-slits, like your ancestors, the prehistoric fish. At another stage you had an embryonic tail, like your relatives, the prehistoric apes. That body of yours is one link in an inconceivably vast chain that goes back, father-mother, grandparents, great-grandparents, great-great-grandparents, and so on, to remote stages of life's beginnings on this globe. You are inextricably part of the whole biological process of the earth."

"In what language are you thinking?" carried on the Sociologist.

"English," said the Student.

"Do you ever think except in a language?"

"No."

"We may want to reconsider that later," the Thinker interpolated.

"But since you are unaware of thinking except in language,"

observed the Sociologist, "you admit that your very consciousness is a social product. Those words, with which you think, are a heritage hammered out through generations of experience."

"You make me feel as if the whole cosmos flowed through my body and my mind," the Student protested. "It's rather frightening! Inescapably, I'm part of this organizing process which has been building up the universe. Evolution isn't just something that textbooks tell about—it's something that's happening in my body, and my body is a link in the process. Chemistry is part of me, and I am part of chemistry. Consciousness is part of me, and I am part of Consciousness. The struggle of the whole universe is surging up in me, and I have to fight it out, somehow, myself!"

Merchantson looked puzzled. "Yes, but what does all that mean in a practical way?" he asked.

"Perhaps it means that we have found a clue to one of the basic questions you fellows have been raising," returned the Thinker.

What Is Really Worth While?

"THE CLUE—LET'S have your clue!" Workerson demanded.

"Here it is," offered the Thinker: "If we recognize ourselves as parts of a patternful universe, then fulfillment of life is attainable to the degree that we fit our bodies and our personalities with creative harmony into the emerging patterns of the world in which we live."

"But, practically, what does it mean?" Merchantson insisted.

"Suppose you wanted to drive an auto from your home garage to a distant city, how would you fulfill your purpose?"

"I'd just climb into the car and drive it."

"Any patterns involved—any organized functional units—any designs?"

"Well, there's the design of the car, if that's what you mean."

"All right; the automobile mechanism is a functional organization. Is any other pattern or organism involved?"

"Organism? You mean my body?"

"Can you interpret success in driving in terms of fitting the patterns of your body with creative harmony into the patterns of the car?"

"Well, of course, unless I turn the ignition key with my fingers, and release the brake with my hand, and step on the right pedals in the right way, and turn the steering wheel just right, I can't even get out of the garage!"

"Any other patterns involved in getting to the distant city?"

"There's the pattern of the roads," broke in Workerson. "You have to study the route on the map, unless you have it in your head already."

Here the Sociologist interrupted: "And there is the patterned flow of intersecting, opposing and overtaking traffic, the pattern of stop and go lights, and the pattern of traffic laws and regulations."

"Not to mention the patterns of stone walls, telegraph poles, slippery pavements, cows, cops, and detours," the Student supplemented.

"I get you," announced Merchantson. "Your proposition is that we can't succeed at all in life unless we learn how to fit ourselves in with the system, like a driver fitting his hands to the controls of a car or an airplane. We get there in life if we learn the way things work, and act accordingly."

"You mean just accept things—just acquiesce in things as they are!" Workerson burst forth.

"Hold on there," protested Merchantson. "The Thinker said to fit ourselves with creative harmony, into the emerging patterns of the world we are in. That would mean constructive conservatism in a dynamic world, wouldn't it?"

"Where did you get all those long words?" Workerson jibed. "Who wants conservatism—constructive or any other kind? What I want to do is to dynamite the old patterns and start over again."

"Even dynamite operates in accordance with fixed laws, and natural laws are patterns of action," the Physicist observed.

"How about that?" Workerson appealed to the Thinker. "Would revolutionary activity be fitting the patterns of one's personality into the emerging patterns of the world?"

"Would you or would you not regard Communism as an emerging pattern?" requiered the Thinker.

"Emerging patterns or conservative patterns—who wants to be a slave to the mechanisms of the cosmos anyhow?" protested the Student. "Going lock-step with the universe doesn't appeal to me as a particularly thrilling answer to our problem. I prefer my Creed of a Mechanistic Materialist: 'The important objectives are to gratify bodily appetites and to get thrills, money and power.'"

"What are some of these thrills that provide life's true objectives?" the Thinker inquired.

"Oh, burning up the road with a new car, getting rid of your inhibitions with a few sociable cocktails, topped off, maybe, by getting gloriously drunk, betting your bottom dollar on a long-shot—and winning, breaking through the resistances which a pretty girl puts up around herself, or marching off to a war."

"What is it that makes thrills thrilling?" the Thinker pursued.

"Why, I think people just crave intense activity," the Student guessed. "Not just activity of muscles, you know, but activity of glands, and nerves, and brain cells. People like to get excited, don't they? They like to laugh, and make love, and rough-house, and risk their bottom dollar."

"They like to be afraid, too, and shocked, and horrified; they even like to cry," observed the voice of a woman who, hitherto unobserved, had been listening. "Isn't that why the movie thrillers, and the mystery novels, and the tabloid newspapers are such successes?"

"One of our textbook writers has claimed that the motive of life is to function," commented the Sociologist. "By functioning, he means using the structures of the body and of what he calls the 'expanded personality.'"

"But that upsets the whole idea that fulfillment of life comes from fitting into patterns," exclaimed the Student. "You can get just as big a thrill from breaking down structures as from building them up. It's much more exciting to burn a house than it is to build one. Most people function more in war than they do in peace time."

"Tell me," the Thinker challenged. "What are the most tragic events of life—the crushing experiences from which men shrink away with dread?"

"Waking up in the hospital, with your father's new car conclusively wrecked, with yourself crippled for life, and your best friend in the morgue," said Merchantson.

"Discovering that a friend you trusted has been playing you for a fool, and laughing at you behind your back," put in the Student.

"Flunking out in school," added Merchantson.

"Getting fired from your job, and then walking the shoes off your feet looking for another, while sour faces shout 'Nothing doing!' at you all day long," said Workerson.

"Finding the woman you married has double-crossed you, and all your pretty castles are just crumbling pasteboard," put in the Student.

"Losing the home you had more than half paid for, and paid for out of blood and sweat!" exclaimed Workerson.

"Seeing your child die," added the feminine voice.

"Coming up to the verge of success, and then having someone else take your chance away from you," put in Merchantson.

"Being disgraced and avoided as an outcast," the Biologist suggested.

"Losing the faith on which you had been building your life," said the Sociologist.

"All right, take this list of tragic experiences," the Thinker proceeded. "What is it that makes them tragic?"

"They're tragic just because they stop you from functioning," the Student asserted. "When the car is smashed up, you can't joy-ride in it any longer. When your legs are crippled for life, you can't very well dance, or swim, or play ball. When your friends are in the morgue, you can't get into exciting conversations with them any more."

"When you're fired, you can't function on the job any more," put in Workerson.

"Yes, but how about the pain nerves?" inquired a new voice, which proved to be that of the professor of psychology. "Most people seem decidedly averse to having those function!"

"Just a kind of stop-light, invented by evolution some hundreds of millions of years ago," the Biologist suggested. "Pain simply warns: 'Look out! The structures which are essential to your functioning are being damaged!'"

"It isn't only pain that is built into the structure of the species," added the Sociologist. "Much of our thrill life is founded on the biological processes on which the very existence of the human race depends. Thrills are apt to be tied up with cravings to function in vital ways. The demand of the stomach to carry on its normal functions becomes imperative if long suspended. The urge to reproduce has a power far beyond the impulse to use the calf muscles. The impulse to protect the body becomes an all-absorbing passion at times of deadly danger. Those of past generations who failed to find keen zest in such sorts of functioning were not likely to perpetuate their kind."

"What are you going to do about that?" the Student challenged the Thinker. "Here are two diametrically opposed ideas about how to get the rich life. You say, fit your body and per-

sonality into the patterns of the world in which you live. We say, function just as fully, and intensely, and expandingly as you can. We say life ought to be thrilling! If your patterns make life drab and dreary, we think they ought to be smashed!"

"Where is the inconsistency?" inquired the Thinker.

"You too believe life ought to be thrilling?" the Student demanded.

"Certainly, life ought to be thrilling," the Thinker asserted.

"One of the greatest mistakes—one of the great sins, perhaps—is to fail to fulfill the thrilling possibilities of life."

"You're willing to stand by that?" the Student quizzed. "You actually mean that a fellow should go out after the most possible thrills in life? You'd use that as a test of what kind of sex life he should lead, what he ought to try to do in business, and all the rest of the decisions he has to make?"

"Well, personally, I want to make sure that my thrills today do not prevent life from becoming more and more thrilling in the future," the Thinker guarded. "But let me ask you all another question. What are the outstanding joy-spots in the typical human life—the events that leave the most treasured memories?"

"Finding a real comrade, graduating from college with high honors, being offered a job where you can make good in a big way," suggested Merchantson.

"Discovering the right girl, and after overcoming great obstacles, marrying her amid general jubilation," added the Sociologist.

"Moving into your own home, and having the children you have longed for," put in the feminine voice.

"Making a successful invention, after years of research—or, for that matter, achieving any goal after long struggle," the Physicist proposed.

"Being swept with a sudden and profound awareness of the majesty and the splendor of the universe of which we are a part," added the Astronomer.

"You're just giving the opposites of the list of tragedies," the Student protested.

"Put the two lists together, then," the Thinker suggested.

"Why is one set of experiences tragic and the other set joyful?"

"I suppose it's this pattern-fitting business again," conceded the Student. "You suffer when you smash up your body, or your marriage, or your job; you are happy when you build your personality into the patterns of friendship, study, business, love, and community approval. But how does that go together with the idea that thrills come from functioning? Thrills make you happy, but you have to give up thrills in order to be happy!"

"You can't function unless you have structures to function with," retorted Merchantson. "It's a short-sighted thrill that wrecks the structures through which tomorrow's thrills ought to come. I figure the Thinker means that, on the whole and in the long run, you get the keenest and fullest thrills if you play the game, and if you build up the structures of your life, so that they fit into the pattern of the way the world is put together."

At this point Workerson broke in with a protest which had been gathering for some time. "You all talk as if the thing that was most worth while is to look out for yourselves, to figure out how you can get the biggest thrills and the richest functioning. Well, I can't go along with you on that. Children are half-starved in the alleys of the cities, but farmers can't find a market for their milk, or grain, or fruit. Textile operators shut down their factories for lack of orders, while workmen's families go in rags. Children are learning to use machine guns and bayonets to kill other children, because big generals of industry want to go on functioning with their economic imperialism. And you're all looking out for the thrill-spots for yourselves. Well, I'm going to find some place where I can fling my life into the grim business of making the world over, so that the hungry can grow strong and rosy, so that the exploited can go free, so that the rich things of the earth can be had by the poor, and the oppressed, and the ignorant."

"Perhaps that might be the biggest thrill of all," murmured Merchantson.

There Is Always a Way Out

"WHY NOT GET realistic?" the Student burst forth. "You talk about fitting the patterns of your personality creatively into the emerging patterns of the universe. Well, suppose the patterns don't emerge? Suppose that a chap wants to be an engineer or an architect. He spends years of the hardest kind of work. He goes into debt way over his ears, to get the technical training. But, right before he graduates, the bottom drops out of the construction business. The big firms are laying off engineers and architects in droves. There just isn't any place for your young hopeful to fit in at all. Then where's your formula for happiness?"

"Somewhat the same problem has been stirring in my mind," the Biologist put in. "You use the family as an illustration of an emerging pattern into which the individual must fit creatively. Well, here's a case of which I know. An idealistic, but rather plodding, college professor married a beautiful and brilliant woman. They had two children. She was indolent and hated housework. The husband used to spend hours every day, washing dishes, making beds and taking care of the children. Yet he kept on adoring his wife. When they first married, she had partly finished writing the manuscript of a novel. She let it drift, but he kept after her for years to complete it. He did a lot of the drudgery on it himself—typing, editing, proof-reading, and all that. At last he succeeded in pushing the novel through to publication. It turned out to be a best-seller. His wife was engulfed by a wave of popularity. She spoke of her husband condescendingly, almost contemptuously, but he always referred to her with shining pride. Then she told him abruptly that she wanted a divorce. She had become infatuated with a no-account literary lounge-lizard and cocktail-consumer. For the professor, it meant giving up what was dearest and

most beautiful in the world, but he allowed her to divorce him on falsified charges. Then, when it was too late for him to do anything about it, she demanded and secured custody of the children on the basis of these same false charges. He found out soon that she had convinced the children the charges were true, and that they had come to regard him as a monster. Now just how was this professor to weave the patterns of his personality creatively into such a mess as that?"

"You're still obsessed with individual happiness," Workerson protested. "It isn't the individual that matters. What right have those two men—what right have any other individuals—to demand that the world take care of them when the masses are suffering? Let them forget their personal troubles and go in for the social revolution! There's where the next patterns are emerging. Let them get to be part—"

"All right!" the Student interrupted. "But take your revolutionary idealist—in Italy, or Austria, or Germany, or Spain. Just where is your emerging pattern? Your Austrian Socialists were doing a fine job, building model tenements and working for a better world order. So the government got out the artillery and blew them to bits. What about your Socialists in Germany? Let them work away for half a lifetime trying to build idealism—the Nazis throw the leaders into concentration camps where they are tortured and sooner or later are reported as suicides. Their organizations are smashed. Their children are filled up with poisonous ideas, and made to goose-step in a maniacal war machine. Swell emerging patterns—I guess not!"

"No matter in what situation a normal person finds himself," the Sociologist generalized, "he can choose between five possible ways of reacting. He can either acquiesce ignobly, evade cravenly, attack vindictively, grapple courageously, or cooperate creatively."

"Wait a minute!" the Student objected. "You'll have to show me!"

"Take your young engineer who was left high and dry by the depression," the Sociologist expatiated. "He might acquiesce ignobly—take it lying down, as the boys say. That is, he might just sit around pitying himself, and sulking, without

trying to do anything about it. Or, he might evade cravenly. He might try to run away from his unemployment by turning into a tramp, or by losing himself in daydreams. Then again, he might attack vindictively. He might go around denouncing the university that trained him or the heads of the big engineering companies. He might take it out in hating the capitalistic system and becoming an agitator for the violent destruction of our present industrial system. The fourth way to react would be to grapple courageously. This young engineer might go to work to take a calm, clear-headed inventory of the situation. He might find out as impartially and dispassionately as he could just what his own best abilities and resources were. He might find out in what lines of activity engineers—or non-technical men—with his special capacities were needed. He might use all his brains to discover the best methods of connecting up his capacities with those needs. If one attempt failed to work out, he might try another. No matter what apparent disaster a man meets, there are always a number of different possible things to do. The courageous man coolly selects the thing that seems most promising, and puts all his available resources into taking that best way out. The fifth type of reaction—to cooperate creatively—is a further development of grappling courageously. Your young engineer who sought to cooperate creatively would get to work, not only on his own personal problem, but on the total situation as far as he could affect it constructively. He'd be interested in the plight of other young men—and old men—out of jobs. He'd turn part of his attention to understanding the causes of the depression. He'd seek out other people who were working at the problem courageously. He'd be ready to pool resources with them (when he could wisely) in group activities to mend the situation as a whole. He'd recognize himself as a part of a much wider and deeper process, and he'd seek to play his part with energy and team-work in the total groups to which he discovered himself to belong. Now my contention is that every normal person, whatever emergency he confronts, can choose to react in whichever of these five ways he prefers."

"That's a swell idea, all right," the Student rejoined. "I'll bet you get away with that in great shape in your popular

lectures. The only trouble is, it won't work. Take your idealistic liberal under a dictatorship. He can acquiesce ignobly, all right. And he can attack vindictively—for a few minutes, until the machine-gun bullets catch up with him. But how is he going to cooperate creatively? Or grapple courageously? Or even evade cravenly, if that's any different from acquiescing ignobly? They won't let him escape from the country."

"Aw, there's a difference there, all right," interposed Merchantson. "This idealist might just sit around pitying himself. Or he might give up being an idealist, and become a slave of the dictator. Either way would be acquiescing ignobly. Then again he might try to ignore the new regime and get away from it as much as possible. He might take as little part as he could, safely, in their parades and organizations. If he couldn't escape physically he might retreat into a world of fiction and fantasy."

"All right, but how can you grapple courageously with a dictatorship?"

"Suppose you were caught in a dictatorship regime," the Sociologist expounded. "Suppose you said to yourself: 'I'm going to squeeze all the experience and insight that a brave man can out of a situation like this. I'll not get panicky or despairing. I'm going to understand what's happening as far as a man like me in this spot can. I'm going to watch for every possible chance to turn these apparent dangers and hardships into long-run assets. I may be a spy in an enemy's camp. I may be about to undergo tragic suffering. But I'll play the drama out with my head up and my eyes clear. I'll not cringe or quit or blow up in blind fury. The future belongs to the brave!'"

"And I suppose you'd cooperate creatively with the Fascists or the Nazis?" inquired Workerson sarcastically.

"I'd seek to cooperate with whatever seemed most creative in the situation in which I found myself," the Sociologist replied. "If there were aspects of the dictator's regime that seemed constructive, and that I could work with without self-stultification, I'd throw myself into them. If there were other liberals with whom I could team up to keep alive the things we believed in, I'd give all I had to working with them. I'd

keep seeking the master-pattern that lies behind the apparent chaos—the potential pattern if no actual pattern could be seen—and I'd give myself with might and main to that."

"Would you have gone on cooperating creatively with that lazy and ungrateful woman if she had been your wife and had divorced you?" the Biologist inquired.

"A man might come out of an experience like that embittered and defeated," the Sociologist observed. "Or, he might come out with a new and deeper wisdom, a far clearer understanding of life, a sensitivity and sympathy with the sufferings of others, such as never otherwise could have been his. He might come out hating his former wife. Or he might continue to love her and to stand ready to do anything in his power to make her life and the lives of his children really richer. If a man can learn, whatever happens, to grapple courageously and cooperate creatively, nothing that life brings to him can defeat him."

"I can't see that that excuses the universe for giving so many people such a raw deal!" protested Merchantson. "The whole episode of human life on the earth is so mixed up with pain, evil, defeat, disappointment and injustice that I can't really respect the universe; I can't care very much about its program!"

"I'm not concerned with justifying the universe," the Sociologist responded. "I'll leave that to the philosophers and the theologians. I'm interested in finding a way of living richly and creatively."

"But you would hardly argue that every human being can grapple courageously and cooperate creatively, no matter what happens to him," the Psychologist pointed out. "Here's a man in whom important brain centers have been paralyzed by sleeping sickness. Or take a person whose resistance is worn down by hunger, fatigue and pain. Courage has to have sugar reserves to pour into the blood and healthy nerve centers through which one's electro-chemical energy can flow. You can't expect heroism from a corpse!"

"I'm not pretending to offer a universal formula," the Sociologist explained. "I refer only to people who are sufficiently conscious and self-possessed to understand ideas such as we

are now discussing. Any such person has some degree of control over his own attitudes. He can decide whether he will use deliberately and courageously such resources as he possesses. It is a matter of personal choice. I, for one, prefer to play the man, to play the game clear to the limit, and if there is no way out but to starve to death, or to be tortured by sadists, I prefer to die with my chin up, as long as I can hold it. I want to win all the experience, the adventure and the growth that even tragedy can give me. I want to win full partnership with all the forces that work toward truth and justice in the world. And that's what I want for my children, my wife, my friends—and for all brave men and women, everywhere.”

PART II



CHAPTER VII

Let Us Be Really Skeptical!

"I'M SKEPTICAL ABOUT your whole approach!" announced the Student. "You're talking about what is really worth while; that means you're talking about values. Values are subjective. You can't be sure about anything subjective. It's all moonshine!

"Even if values were a subject on which truth could be found, I'm skeptical about all your processes of reasoning. Freud showed them up! Our so-called intellects are just rationalizing devices, to provide deluded excuses for doing what we want to do and thinking what we want to think. Nobody can get away from that. That makes me skeptical of all the philosophies the human mind cooks up!

"Even if you could tell what values are worth while, I'm skeptical about anybody being able to do anything about life. We're all prisoners of determinism. These bodies are just machines that run according to the fixed laws of physics and chemistry. We can't escape. I'm skeptical about all your notions of mastering life and changing the world. They're just hallucinations and wishful thinking!

"Even if we weren't mere puppets of matter and physical laws, what's the good of striving to build anyhow? All my hopes and values will flicker out when these lungs gasp their last breath. All the aspirations of mankind will die when the sun grows cold; the stark skeleton of man's ephemeral civilization will go wheeling along on a slowly slackening and lifeless earth. The universe may be patterned, but it certainly isn't purposeful. Evolution blunders and staggers. Man gropes his way toward practically certain self-destruction. I'll get what thrills I can out of this body of mine, and I'll master as much as I can of this relentless stuff called matter, but I'm skeptical about the whole meaningless and tragic business of existence!"

"You're not half skeptical enough!" It was the Physicist. The Student eyed him speechlessly for a moment. Then he questioned: "Not skeptical enough?"

"Not half! It's not enough to doubt whether there is any purpose in the universe, or whether man's strivings can survive the cooling off of our solar system, or whether personalities perish when their physical bodies die. Why not go clear to the bottom? Why not challenge the very foundations of our selfhood and of the world we live in?"

"You are assuming that that body of yours is real, just because you can see it, and touch it, and feel that it is solid. Now, as a physicist, I am moved to challenge your assumptions. What is that body of yours made up of?"

"Why, organs, I suppose."

"And your organs—what are they made of?"

"Cells, and the cells are made up of molecules, and the molecules of atoms and the atoms are made up of electrons and protons. What of it?" the Student countered.

"Some modernist has said that matter is nothing more than a kind of mush made of electrons," said the Physicist.

"Rather thin soup, I'd call it!" interjected the professor of philosophy, who had been waiting for a good opportunity to join in the argument.

"Well taken." (The Physicist hastily recaptured the lead.)

"There is as much space in an atom, proportionately, as in a solar system. Eddington tells us that if we eliminated all the unfilled space in a man's body, and collected his protons and electrons into one mass, the man would be reduced to a speck just visible with a magnifying glass."

"So what?" inquired the Student.

"This solid matter out of which you have built your mechanistic universe turns out to be nothing but a sort of mist made up of charges of electricity. Just listen to what your Bertrand Russell says about atoms:

An atom is now merely a convenient way of grouping certain occurrences; it is convenient, up to a point, to think of the atom as a nucleus with attendant electrons, but the electrons at one time

cannot be identified with those at another, and in any case no modern physicist thinks of them as real.

Your world turns out to be made up, in the final analysis, of mathematical equations. Your ultimate particles of matter aren't hard billiard balls; they are just some hypothetical creations in the minds of physicists!"

"That may all be true," the Student insisted, "but here's my body just the same. I can feel it and see it. It has shape, weight and color. That's enough for me."

"But that color," the Physicist persisted—"take the red color of the sunburn on your arm, for instance. Is that color in your skin or in your brain?"

"Oh, I know *that's* there," rejoined the Student. "I can feel it as well as see it!"

"Well, as a physicist, I have to inform you that what you take to be red on your arm is merely a broadcast of light on a certain wave-length. You interpret the waves, in your brain, as red. And that pain from your sunburn certainly is in your brain, not in your arm. It comes from nerve currents which can be measured electrically. If your arm had been amputated, and the proper nerve were stimulated in the proper way in the stump, you would still feel that sunburn pain."

"And when I put my hand over the burn, and feel the heat," the Student took it up, "I suppose I'm just interpreting in my brain the heat-waves from the inflamed skin."

The Physicist pushed on to his objective: "The scientist, then, seems led to the conclusion that our senses of color, solidity, tangibility, weight, temperature and other qualities in physical objects are merely our subjective interpretations of interactions between hypothetical galactic clusters of solar systems made up of charges of mysterious force."

The Student blinked, and looked toward the Thinker. "He means," interpreted the latter, "that when you supposedly touch your arm with your hand, it's really only the swarm of electrons which you *call* your hand, interacting with the swarm of electrons which you *call* your arm, and both of those swarms interacting with the swarm which you *call* your brain, to pro-

duce consciousness, and all the while even the swarms are just theories. In other words, what you assume to be the objective material world turns out to be known only in terms of subjective experience."

But the Student persisted: "Whether my body is made up of billiard-ball atoms, or of vibrating electrons and protons, it's there. It has shape, and solidity. I can see it and touch it."

Here the Philosopher interposed, "How does your sight of your body get to your brain?" he inquired.

"Through my optic nerve," replied the Student. "Yes, I get you. All these sensations come to my brain through nerves. You've driven me back into that dark prison called my skull, and all the knowledge I can get about the outer world comes as mechanical signals over the nerves. My inner consciousness can't come into direct contact at all with the outer world. It's the old Locke, Berkeley and Hume stuff."

"Oh, you've heard of them, then," smiled the Philosopher.

"Never took them very seriously," the Student retorted.

"You were taking your own philosophy of life rather seriously this morning," observed the Thinker. "When philosophies come to be a matter of life and death, why not test them out and be as sure as we can that they are sound?"

"All right, you win," the Student conceded. "Here I am, prisoner in my own skull. Where do we go from here?"

"But how do you know that you have a skull?" the Philosopher probed.

"I can feel it with my hands, look at it in my pocket mirror, knock on it with my knuckles!" The Student demonstrated.

"But how do you know that you have hands, knuckles, or a pocket mirror?"

"By seeing them, feeling of them—oh yes, I see that you've got me. The skull prison is just as subjective as the rest of the physical world! Still, it doesn't seem sensible—here's the cool metal of the ship; out there, beyond the deck, the blue Pacific stretches toward Frisco, with sunlight shining on the white-caps, and, over there, the pit of the Inferno belches its plume of smoke. And you try to tell me that it's all inside my head—no, you try to tell me that I haven't any head, and it's all a

delusion! Or is there such a thing as a delusion?" he added with a grin.

"Why not try another slant on it?" The speaker had been a little apart from the group, listening with intent interest. The Student hastened to introduce him as a Theosophist who was travelling with the party. The new speaker continued: "See if you can prove to me that you are not dreaming this whole episode!"

"Well, there's the old test of pinching oneself." The Student demonstrated so impulsively that he forgot his arm was sunburned, and produced a loud "Ouch!" from himself.

"That's no good," said the Theosophist. "The pinch may just be part of your dream. Dreams are funny things. I've recorded nine hundred of my own during the past year and a half. Just the other night, I found myself standing beside a little building. Suddenly it came over me that I was dreaming, and I said to myself, 'Here is my chance to find out what the dream world is really like!' I put my hand against the side of the building. It was made of weatherbeaten boards, set vertically, with wooden strips over the cracks. That gray board I felt of was just as solid and objective as any wood I ever touched. I bent down, and noted that the structure was set up on posts, six or eight inches above the ground. Out of the sandy soil was growing a fringed gentian, and the dainty edges of the petals were just as detailed as any I have ever seen. Then, knowing that it was a dream, I rose into the air by will power, and floated away above the trees."

"Try floating away above the Pacific," the Student suggested with a grin.

"Just the same," broke in the Philosopher, "I do not see any way to prove that this life of mine is not merely a vivid, consistent, convincing and prolonged dream."

"I'm sure it's not just your dream, with me as a figment of your imagination," the Student reassured, "but I suppose you might be just a thing in my dream."

"Perhaps we might all be dreaming, and sharing the dreams by telepathy," suggested the Thinker.

"How do you know that you are not now really on a stage

with a very powerful hypnotist, who is making you believe that you are discussing the meaning of life on a steamer near a Pacific volcano?" the Theosophist persisted.

"Say, is this sporting?" the Student protested. "You're all cracking down on my materialism from three directions, one after another. First, the Physicist turns my body and this solid earth into swarms of mathematical equations; second, the Philosopher teams up with the psychologists to cast doubt on whether there is any real outer world from which my brain (if I have one) can get any messages; third, the Philosopher gangs up with the Theosophist and dares me to try to prove I'm not just dreaming this whole life, or that I'm not just the deluded victim of a hypnotist!"

"For that matter," observed the Thinker, "how can you prove that we are not just characters in a book?"

"But that, of course, is silly," the Student objected. "If we were characters in a book, we'd be just some lines of black marks on paper, or at best some lines and smears in the illustrations. And really, we're flesh and blood. Oh, I know that this flesh and blood business may be just a subjective delusion, inside a skull prison that doesn't exist, or merely a dream, or perhaps a hypnotic hallucination. But whatever it is, I feel like a real person, and not like a string of black marks on the page of a book."

"Maybe you are flesh and blood only in the imagination of the author, and of the people who read the book," the Thinker suggested.

"No!" burst forth the Student. "I'm real! I am myself! To me, that's the most fundamental fact in the universe!"

Foundations for a Workable Philosophy of Life

"WELL, YOU'VE CURED me of being a materialist, anyhow," the Student conceded.

"Theoretically, perhaps we have," amended the Philosopher.

"But look where you've left me," protested the Student. "I'm after a workable philosophy of life. I want to find some way of thinking that makes living worth while. And here you smash up what little science of life I've got."

"The underbrush has to be cleared away before one can build a palace," the Thinker observed.

"But you make my body and the outside world seem so unreal, so kind of dubious. Why, if you fellows are right, I can't be sure that anyone except myself really exists. Instead of being a materialist you're making me into a—a——"

"Solipsist," the Philosopher supplied.

"That's not a position to end up in," suggested the Thinker. "It's a place to start from."

"Well, hurry up and let's get started," urged the Student. "But first, tell us what's a solipsist?"

"A solipsist is a person who denies that a human mind has any good reason to believe in the existence of anything except itself," the Thinker explained. "Since you're a solipsist, the only thing you have to build on is your own stream of consciousness. But suppose your life really is nothing more than a dream. At least dreams are something you can study. Perhaps we can get a clue by analysing the raw materials out of which your daily experiences are built."

"Such stuff as dreams are made of?" mused the Student. "Well, if it's a dream, it sure is a mighty regular kind of one. It's all divided up into stripes that I call day and night, and

there are wider stripes that I call winter, spring, summer and fall. And then these stripes are all full of objects—"

"Hold on there!" broke in the Philosopher. "Objects are objective—they are things that are supposed really to exist in and of themselves. If you are a thorough-going, skeptical solipsist, you have no right to assume that anything exists except your own consciousness."

"All right," the Student retorted, "I'll call them experience-patterns instead of objects. Is that all right? I look around and I observe four more or less oval patterns of the sort I call 'faces.' Each is different from the others. Yet they all seem to have a common design. Each of these faces has a kind of slit on the lower side. That slit is likely to open up, more or less convulsively, and when it does, I begin to receive audible word-patterns, whose sounds fit in with the way the lips move. But I don't see just how that gets me very far toward a workable philosophy of life."

"As one good solipsist to another," agreed the Thinker, "I can check with you on this business of patterns within the dream-stuff which we call life. At my feet, up on the mountain, I found pebble-patterns. They looked gray and red, smooth and round. They felt smooth and round, cool and weighty. They travelled in familiar curve-patterns when I threw them at the wall, and they gave a 'click' when they were seen to hit. The world which I call consciousness seems to be made up of recurring patterns—redness, pain, muscular effort, curiosity, white-capped waves, sea gulls, ships, books, sonatas, dance steps, kisses, lectures, scientific laws."

"Are you assuming that these so-called patterns exist independently of your own consciousness?" asked the Philosopher.

"For the time being, my aim is to assume nothing; I'm just reporting."

"You would call everything a pattern—everything for which there is a word in the dictionary?" the Philosopher interrogated.

"Yes, and a great many things for which there are no words in the dictionary," was the answer.

"All right, what are you going to do with the patterns?" urged the Student.

"Suppose we start by trying to sort them out. I can divide the patterns of my experience into two essentially different groups. The larger of these consists of the patterns which stay in my consciousness for a longer or shorter time and then disappear, out of reach. As contrasted with these, there is one set unique from all the others in my experience. It is the group of experience-patterns that are always at hand whenever I am awake."

"Like my pipe," the Philosopher suggested.

"I'll bet you wish it was always at hand," jeered the Student. "I've seen you hunt for it! What's the set you are talking about?" he asked the Thinker.

"What set of patterns do you find that are always within reach, as long as you are awake and normal?" the Thinker retorted.

"Not my clothes, when I'm swimming, not my home when I'm travelling, nor my money when I'm broke—oh I know: It's my body. It's this group of patterns I call my physical body."

"Whatever experiences come to me during my waking life, my body is there—the patterns of hand, feet, muscles, mouth, ears, eyelids, and the rest—they're near always, for me to touch or use," reiterated the Thinker.

"I guess no other patterns fulfill this test," the Student agreed. "But say, that gives my body back to me. Maybe I can be a materialist after all."

"How is this body different from the one you were talking about in your Creed of a Mechanistic Materialist?" the Thinker inquired. "As a materialist, which were you surest about, your body or your consciousness?"

"My body, of course," answered the Student. "Consciousness was something nobody could measure—something to be dubious about. My body was the thing I was surest of in all the world. It was the basis of my whole existence."

"And what are we starting with now?"

"Yes, I see. We're starting with consciousness as the only thing we are sure about. We begin with that. My body, as far as we've gone now, is just a set of experience-patterns which have the peculiarity of being always within reach whenever I am awake."

"And do you propose to build a philosophy on those assumptions?" the Philosopher challenged. "You are aware, of course, that for thousands of years wise men have wrangled about those questions without reaching any agreement. As Professor Joad has pointed out, it is extremely unlikely that any of the present systems of metaphysics are correct. I expect the arguments will go on for thousands of years more."

"That takes us right back to what I said a while ago," the Student pointed out. "Human reason is just a wish-fulfilling device. Each philosopher believes what he wants to believe, and then cooks up a system to justify it. You can't get anywhere by using this delusory human reason of ours. Mind is just a mechanism to make excuses for our desires. You can't get away from that!"

"When two sets of workers start to dig a tunnel from opposite banks of a river or from opposite sides of a mountain, is there any chance that they will connect with each other?" the Thinker inquired.

"Sure; they hit it within an inch or so."

"How does that happen? They used human brains to plan the thing, did they not?"

"Oh, but they worked on the basis of scientific experiment, and they have methods of double checking to eliminate error."

"Might we not perhaps work out a philosophy of life by experiment, and gradually perfect methods of checking one another, in order to eliminate the biases which distort more or less the thinking of every isolated individual?"

"All right—how would you do it? Commence with your own consciousness. We agree that each of us is sure of that and of nothing else at the start. We agree that each of us finds his consciousness full of recurring patterns, and that one bundle of such patterns is our body, which is unique because we can't get away from it while we are conscious."

"While we have ordinary waking consciousness," the Theosophist amended.

"Not all philosophers will accept these propositions," the Philosopher observed. "Behaviorists, for example, attempt to exclude consciousness from their philosophical system."

"But, see here," the Psychologist objected, "behaviorists

unconsciously base their philosophy on a whole set of naive assumptions. They are not nearly so skeptical as we insist upon being. They take for granted the independent existence of the behaving individuals and of the observers."

The Thinker turned to the Student: "Have you still that creed of a materialist in your pocket? Read us once more the first three articles."

The Student flushed a little as he read:

1. The tests of reality are touch, sight, and experimental verification.
2. The most real part of me is my body. I did not exist before my body was conceived, and when it dies I shall cease to exist.
3. Consciousness, and all that makes the human mind, can be reduced to physics and chemistry. Biology is nothing more than matter and motion. Thought is nothing more than electricity.

"We are making a fairly fundamental break with that view of life," observed the Thinker. "Working out the implications of our new agreements may involve some rather arduous mental labor. Don't undertake it unless you really want to."

"I'm keen for it," answered the Student.

"Let me ask one further question about fundamentals," said the Thinker. "The Philosopher has already quoted Joad's doubts as to whether our modern philosophers have arrived at truth. What say the scientists? How near have they come to a complete understanding of the universe?"

The Astronomer reached into his pocket. "Let me quote James Jeans. In his 'Astronomy and Cosmogony' he points out that, if the solar system continues along the trends which seem reasonably probable, the human race has a future that must be measured by at least a million million years. Anthropologists can trace culture into the past only about a million years. Jeans bids us reflect that mankind is at the very beginning of its existence; on the astronomical time-scale it has lived only a few brief minutes, and has only just begun to notice the cosmos outside of itself. It is hardly likely to interpret its surroundings aright in the first few moments its eyes are open."

The Physicist concurred: "I feel driven to conclude that there exist in the universe about us unlimited quantities of

reality which are beyond the present knowledge of man, and even beyond any capacity for knowledge which he is likely to acquire in any predictable development of human culture."

"Each mystery unfolded by the microscope or by laboratory experimentation opens up a series of new mysteries to be studied," admitted the Biologist.

"Psychology is only beginning to be a science," the Psychologist confessed.

"And sociology can hardly claim to be a science at all, as yet," added the Sociologist. "We have some fragments of data, and a chaos of theory. Our great discoveries lie largely in the future—at least, so we hope."

"We seem agreed," the Thinker noted, "that we are not conceivably to arrive at any final version of truth in our lifetime. We seek a way of life, founded on intellectual integrity. I take it we are ready to follow the truth wherever it leads us—to follow through the best working hypotheses we can find, seeking courageously for new discoveries about the meaning of existence. Beginning with the agreements which we have already reached, let us see what kind of a workable philosophy of life we can build."

Am I Free?

"YOU TALKED A while back about working out a philosophy of life by experiment," the Student reminded the Thinker. "Why not begin now?"

"Very well. Will each of you take a pencil and paper, and draw something—anything you can think of." Pencils and scratch pads emerged from pockets, and each of the group produced a crude drawing. "Now what is the most important difference which each of you finds between the process of creating your own sketch, and the processes by which the other sketches were created?"

"Mine's a girl's face, and the Biologist's is a whale," suggested the Student.

"That is a difference in the design, rather than in the process by which it was created," objected the Philosopher.

"Did you feel different in any basic way about the process of producing your own drawing from the way you felt about the processes by which the others were producing theirs?" asked the Thinker.

"Why, I wasn't conscious at all of the processes which they used—not in the way I was conscious of working out my own. I designed mine myself—I did it on purpose. But say, that applies all along the line. The words I speak feel entirely different from the words I hear someone else speak. I make up my own, and I just listen to the words other people make up. I make my own chin go, and I only watch other people make their chins go."

"You have solved one of your problems right there," observed the Thinker.

"You mean one of the problems I was raving to you about? Which one?"

"The problem of free will. You remember, you were saying

that you are a strict determinist, and that you're not responsible for your actions? Well, here is your answer!"

"Oh, I do not see that at all!" objected the Philosopher. "Think of all the volumes that have been written on determinism versus free will, and all the philosophy courses that spend three semester hours on the subject, and never come to any conclusion. And here you claim to have solved it just by having us draw some scrawls on paper!"

"It will bear a lot of talking about," conceded the Thinker. "But we are concerned here with the basic materials of our consciousness. We all agree that we experience a multitude of patterns. Now, I find that the patterns of my consciousness fall into two groups. One consists of the actions which I bring into being deliberately, because I'm wanting to do it, and trying to do it. The other group of patterns happen, or at least come into my consciousness, without my doing anything intentionally to create them."

"Same here!" agreed the Student.

"Well, some such difference does exist, subjectively, if you wish to put it that way," conceded the Philosopher.

"Now take those patterns which happen without our voluntary cooperation. I think I can demonstrate a further basic division in this group by another experiment." He grasped the Student's hand, which still held a pencil, and forced it, against resistance, to draw a line on the paper. "What kind of experience-pattern is that?" he asked.

"You made me do it!" exclaimed the Student with some vigor.

"Coercion," the Sociologist characterized.

"Was it different from doing something on purpose?" the Thinker quizzed.

"Just the opposite!" said the Student. "Your purpose overrode mine, and made me do what I didn't want to."

"Could you be coerced by natural forces, without anyone intending it?" the Thinker asked.

"Well, I might be swept out from shore by a tidal current when I was trying to swim in," the Student suggested.

"Suppose a man pointed a revolver at you and demanded

your money," inquired the Philosopher. "Would you give up your purse on purpose, or under coercion?"

The Psychologist answered: "In that case the brain would send the order to hand the money over, and the muscles would carry it out, but the brain of the man swimming against the tide, or the brain of the Student forced to draw a line against his will, would be sending out orders against the motions which actually occurred."

"If I gave up the money," put in the Student, "I'd be rebelling inside. Part of me would be resisting. I'd be coerced even though my brain was giving the orders."

"Just to keep our thinking straight, shall we call it bodily coercion when a person's purpose is overwhelmed by superior physical force, and psychological coercion when he is overridden by threats or by intellectual or emotional pressures which make him change his actions without surrendering his purpose?" the Thinker suggested. "If we can accept what has been said thus far, we might agree that the patterns of our experience divide, relative to purpose, into four groups: 1. Those which we perform or produce intentionally; 2. Those which occur in complete opposition to our purposes—that is, by physical coercion; 3. Those which we carry out or produce against our will, under psychological coercion; and 4. Those which occur spontaneously, without our deliberate cooperation, and yet which are not in opposition to our purposes. Can we find the meaning of freedom adequately in terms of this—"

"But," the Philosopher broke in, "it is not difficult to prove that freedom of the will—or freedom of purpose, as you call it—is a delusion. Science is based upon determinism. Every event has its causes, and each of these causes, in turn, has its causes. The chain of cause and effect is complete. The Student thought he was acting freely, of his own purpose, when he drew his sketch of the girl's face. But what were the causes for his drawing that subject instead of something else? Obviously, he drew the girl because he has a girl on his mind. The particular way he used his pencil is merely the outcome of his past training (or fumbling) in drawing. The whole performance, instead of being an illustration of free will, is a perfect example of a completely adequate set of causes."

"Your philosophy seems to be overlooking the recent developments in my field," observed the Physicist. "The behavior of electrons can no longer be accounted for except by the principle of indeterminacy. If you know the position of a given electron precisely, you cannot possibly know its speed precisely; if you know its speed accurately you cannot possibly know its position accurately. The behavior of a given electron is therefore, within limits, a matter of chance. Since the whole world of physics is built upon chance motions of electrons, and since electrons are essential to each atom of every brain, how can you assert that there is no room for free will in the decisions of the human mind?"

"You mean that electrons jump around partly without any cause, and since my brain is made up of electrons and protons, I ought to be able to do things without any cause, and you call that freedom," the Student interpreted.

"As a physicist, will you tell me what factors determine the number of spots which will show on the faces of a pair of honest dice, honestly thrown?" the Philosopher asked.

"You are laying a trap for me, but I'll answer honestly. The factors determining the throw are the positions in which the dice lie when they are picked up, the angles through which they are turned in being thrown, the speed with which they are rotating when they leave the box, the length of the arc through which they travel, the angle and speed at which they strike the table, the nature of the surface on which they fall, and the surface, weight and shape of the dice themselves."

"Yet the average man believes that the fall of these dice is a result of chance—that it is indeterminate. Is that an error?"

"We use 'chance' in that sense to mean that the one who throws is not observing and controlling the causes which determine the way the dice fall. If he is honest, he is not manipulating or even noting the causes which produce the result. His purpose does not control the number of spots which come up."

"But is that not the essential meaning of the word chance?" the Philosopher insisted. "Chance, risk, accident—they all mean the operation of causes which we are not observing or controlling, whether the chance is one of accidental death, or of losing an investment, or of a jumping electron."

"Some eminent physicists would disagree with you on that," remarked the Astronomer.

"Might I put in a point here?" asked a new voice. "I am keenly interested in psychical research, and some of the findings of that new science seem to have a bearing right here. A distinguished aeronautical engineer, named J. W. Dunne, has written a book called 'An Experiment With Time,' in which he tells how he discovered that his dreams often dealt with events which actually occurred afterwards."

"You mean," the Student broke in, "that I might dream tonight all the details of some ghastly wreck or volcanic eruption, and then the thing might happen, day after tomorrow, just the way I dreamed it? Where's your freedom of purpose if the future can be known ahead of time like that? It's just like thinking that a character in a moving picture is free, when every last thing he is going to do is already photographed on the films up in the projection room!"

"Can you ever tell in advance how your best friend will act?" asked the Thinker.

"Sure. If I leave candy around, he'll eat it up. If I'm broke, he'll split his last dollar with me. If the prof assigns him a long paper, he'll put it off till the last day, and then sit up all night writing it."

"Can he ever tell in advance how you will act?"

"Well, I suppose he can. He knows I get peeved if he wakes me up early in the morning, and he knows he can almost always find me down at Joe's place for a half-hour or so before I go to bed."

"Does the fact that he can predict what you are likely to do take away your sense of freedom?"

"No; we're a lot more free, in a way, because we know how to count on each other. But if I *had* to do just exactly what somebody had dreamed last night, I'd certainly not be free."

"Who said you had to? Does the dream determine your future conduct, or does your future conduct determine the dream?"

"But," the Philosopher protested, "causation always acts from the past into the future, never from the future into the past."

"Causation—" caught up the Thinker. "Do philosophers in general believe that causation is real?"

"Nearly two centuries ago," the Philosopher replied, "Hume proved that there is no such thing as causation—nothing but invariable sequence between a so-called cause and its so-called effect. His argument has never been satisfactorily met."

"A minute ago you were saying that every event is absolutely determined by a complete network of cause and effect," burst out the Student. "Now you say that there is no such thing as causation!"

"We teachers of philosophy have the task of making clear all of the leading points of view on questions like these."

"You've certainly made it clear as mud!" Workerson commented.

"You say that we cannot observe causation—we can only observe invariable sequences," put in the Sociologist. "Now public health experts say that typhoid fever is a cause of death. Yet typhoid often occurs without causing the death of the patient, and people often die without having had typhoid fever. How do you make that fit your definition?"

"The invariable sequence which we miscall causation can be ascertained, strictly, only by controlled experimentation," the Philosopher explained. "Suppose you had a thousand animals, all just alike in every significant particular, all perfectly healthy, but none having any resistance whatever to typhoid fever. Suppose you inoculated five hundred of these animals with typhoid fever, but kept the other five hundred uninoculated, and protected all the thousand from any other 'cause' of death. The inoculation of each of the five hundred would, in most of the cases, be followed by its death, while none of the other five hundred would die. In this sense of sequence under controlled conditions, typhoid fever may be regarded as a 'cause' of death. And, wherever science has been able to set up experimental conditions under which all of the significant factors of a problem can be controlled and measured, it has been found that such sequences occur. In that sense, scientists find it rational and workable to believe that all the universe is organized in cause-and-effect relations."

"Do you agree to that statement?" the Thinker asked the

Physicist. "If you do, what about your principle of indeterminacy?"

"Indeterminacy (which might perhaps better be called the principle of uncertainty) crops up only in those problems where we cannot measure and control all of the significant factors," admitted the Physicist. "I think I can accept the Philosopher's statement, subject to certain large doubts about where our study of the incompletely measurable electron may lead us."

"But look here," broke in the Sociologist. "When you set up your controlled experiments, you, the experimenter, always introduce and exclude the 'causal' factor on purpose. Your experiment is successful if you modify the 'effect' in a dependable way by introducing or excluding the 'cause'. Why not, therefore, define a cause simply as a handle by means of which one can produce stated effects?"

"Illustrate what you mean—I don't quite get you," the Student requested.

"In the Philosopher's imaginary experiment, he used typhoid inoculation as a causal tool to produce a deadly effect on his five hundred animals," the Sociologist pointed out. "Now suppose that he had been a health officer in a city with a high typhoid death rate. His experiments have convinced him that pollution of drinking water with sewage is a cause of typhoid infection and therefore a cause of death. He puts enough chlorine into the water to kill the typhoid germs. Thereupon the death rate drops. He has used his cause as a tool to carry out a purpose. Why not think of causation always in that way?"

"What is the cause of an eclipse of the sun?" the Astronomer quizzed.

"You are hinting that since I cannot use the moon as a tool to reduce or increase the number of eclipses, the moon is not the cause," the Sociologist took him up. "But let us set up a solar system right here on a small scale. Take this orange for the earth, this flashlight for the sun, and this golf ball for the moon. Now I can produce all the eclipses I please. If there were a being powerful enough to move the moon around at will, he could thereby modify the eclipses. Whether in the controlled experiments of the physicist, the reconstructive activities of the social engineer, or the ordinary affairs of daily life, we can

recognize causes as the handles whereby, if we can change them, we can modify effects for the fulfillment of purpose."

"What I want to know is, do I or do I not have freedom of my will?" reiterated the Student.

"What do you mean by freedom of will?" asked the Philosopher.

"I mean, am I to blame for what I do—am I responsible?"

"Do praise, blame, and holding people responsible have any effects on people's conduct? Are they useful causal tools to control conduct?" the Sociologist quizzed.

"What would happen to business if bankers and executives were not held responsible for the funds entrusted to them?" asked Merchantson.

"What would happen to law and order if murder, robbery and arson were regarded as innocent pranks—mere symptomatic behavior of slum-dwelling youth?" asked the Psychologist.

"Put it on a more nearly experimental basis," suggested the Thinker. "Here are two professors. One holds you strictly responsible for your assignments, shows warm approval of good work, calls delinquents to account, and gives you the grades you deserve, whether bad or good. The other never reads the papers or examinations that are turned in, never checks up on those who fail to hand in papers, and gives everyone a B. Judging from your past experience, would any differences in student performance be caused by the use or non-use of praise, blame and responsibility in these two cases?"

"Well, of course, when you put it that way," the Student conceded, "holding people responsible may be a useful way to make them work. And I suppose that social approval and disapproval might be justified, merely for practical purposes, as methods of keeping down crime and stimulating people to useful activities. But where is the justice in it when we're each one of us the prisoner of a deadly chain of cause and effect—or, if the Philosopher doesn't like that way of putting it, where's the justice when we're all held fast in the strait-jacket of invariable sequences?"

"Are cause and effect enemies or allies of freedom?" asked the Thinker. "Suppose the extreme indeterminist were right. Suppose that the electrons in your brain jumped right and left

without causal continuity, and that, as a result, your actions at each moment were disconnected with what happened at the previous moment. Would you be better off than if your actions at each moment grew out of what had gone before?"

"Suppose your friends were likely at any moment to start off fresh, so that their actions had no causal connections with what they had done before or with the relations that you had had with them," the Psychologist began. "Would——"

"Look here," Merchantson interrupted, "if we agree that causes are the handles by means of which we carry out our purposes, and if freedom means being able to carry out our purposes, then absence of cause and effect means absence of freedom!"

"You're right at that," the Student confessed. "I give up. I'm a free-will determinist."

"All you people have done for the last hour is to contradict each other," remarked Workerson. "You're not getting anywhere!"

"Last time you said that," the Student remarked, "it was a signal for Thinker here to show that we all agreed with each other. I'll bet he'll do it again right now!"

"Why not do it yourself?" smiled the Thinker.

"All right, just to show you I'm a good sport, I will. We all agreed some time back that our consciousness is made up of, or contains, experience-patterns. We now agree that, as far as freedom is concerned, these patterns fall into four groups: first, those which we perform or produce on purpose; second, those which happen spontaneously, without our either helping or opposing; third, those in which we cooperate unwillingly, under psychological coercion; and fourth, those in which overpowering physical force drags us utterly against our will. We agree that we live in a patternful universe, in which (as far as the scientists have been able to carry out controlled experiments where they could measure fully all the significant factors) certain defined effects invariably follow certain defined causes. We agree that, both scientifically and practically, causes may be regarded as ways by means of which stated effects can be produced, or could be produced if we could control the causes. We agree, therefore, that the network of cause and

effect provides the basic tools whereby purpose can be carried out and freedom achieved. We agree also that praise, blame, and responsibility are often useful tools for social control. Any objections?"

"Bravo!" exclaimed the Thinker, after prolonged silence had indicated general consent. "Let me ask you one more question: What are the limits of our freedom in this universe of ours?"

"The amount of freedom appears to be a kind of ratio between the 'on purpose' patterns and the coerced patterns in our experience," Merchantson suggested.

"We could be entirely free if we could only get rid of the conditions which coerce us," said Workerson.

"A great many of the conditions which seem to coerce the human race are beyond human control," observed the Astronomer. "We cannot control the changes of the seasons, the movements of the tides, the occurrence of earthquakes, the fundamental raw materials of our continents, the law of gravitation, or any of the major fundamentals of the world in which we live. But we can learn to understand the laws of astronomy, physics, chemistry and the other sciences. We can learn increasingly to predict what will happen under given conditions. We can thus learn so to adjust ourselves to the patterns of the universe that our purposes may be fulfilled instead of thwarted."

"Quite a while back," added the Student, "we were talking about grappling courageously and cooperating creatively instead of acquiescing ignobly, evading cravenly or attacking vindictively. If we were right, back there, then freedom doesn't depend just on getting rid of conditions which seem to block us, nor even discovering enough about science to drive our purposes through. We're bound to come to places in life where no matter how much we understand scientific laws, we can't possibly achieve the thing we set out to achieve. But maybe we might build a new purpose that fits the world as it really is. We might become such masters of ourselves that we could be free forever."

Is the Inner World Real?

"DON'T FORGET THAT I'm still a solipsist," the Student reminded the Thinker. "You're just a pattern in my consciousness, but as such, you're supposed to build me a workable philosophy of life by means of critical experimentation and creative discussion. What's next in the process?"

"As a partially evolved solipsist," smiled the Thinker, "suppose you tell me just where you stand, at the moment."

"I know that I'm conscious. My consciousness consists largely of recurrent patterns. I have a body, but only as a peculiarly persistent bundle of patterns. I'm free, more or less, to act the way I want to act, but only because these patterns in my consciousness conform to invariable sequences which can be discovered by experiment, and which provide causal handles for achieving purposes. I can become more and more free, beyond any limit that I know of, by understanding the patterns better, and by adapting my purposes creatively to reality as I find it."

"I agree with you thoroughly up to that point," the Thinker rejoined. "You will note that we reached these conclusions by classifying the patterns in our consciousnesses. Let me now propose a somewhat more elaborate experiment, for sorting out one's experience-patterns in another fundamental way. We might call this experiment a fractional distillation of consciousness!"

"What's fractional distillation?"

The Physicist explained: "If you take a complex mixture of chemicals having various boiling points—such, for example, as crude oil—and heat it gradually, the more volatile substances, like gasoline, boil off first and can be condensed separately. Later, less volatile substances, like kerosene, can be boiled out; then the oils; then the paraffins, and so on. But how does that apply to consciousness?"

"If I close my eyes," the Thinker explained, "one major block of my consciousness largely disappears. I can eliminate it completely by bandaging my eyes thoroughly. I can get the same effect by going into a room which has been properly insulated (by darkening the windows and the like) against certain vibrations called 'light,' which can be measured by the physicist. I call that part of my consciousness 'sight'."

"There goes your mental gasoline," commented the Student. "Now for the kerosene!"

"Suppose I close my ears thoroughly with effective stoppers," the Thinker continued. "A second major block of my consciousness thereupon changes in character. When my ears are thus filled, I can watch mouths going through familiar movements, and faces and hands making the familiar gestures of speech, but I catch only a murmur whose details I can distinguish only with difficulty. I look at a hammer strike a gong, but, instead of a clang which obliterates much of the rest of my consciousness for the moment, I get only a hum. The same parts of my consciousness which are made indistinct and faint by stopping my ears can be similarly reduced in intensity by going into a room which has been properly insulated (by double doors and windows, thick carpets, and the like) against air vibrations which also can be measured with suitable instruments. By combining such methods, and improving their thoroughness, I can eliminate completely the areas of consciousness which I call 'sound'."

"Now we're blind and deaf! Let's boil it off some more!" the Student suggested cheerfully.

"Suppose then that I sit in a comfortable chair, in a breezeless and comfortable room, relax my body completely, and cease paying attention to my breathing and other physiological sensations. Certain further large areas drop out (or are ruled out) of my consciousness. I call these by such names as 'touch,' 'muscular sensations,' 'pain,' and the like."

"You're talking a lot about experiments, but we aren't doing any," objected the Student.

"You would hardly call the laboratory conditions ideal here in this ship salon," the Psychologist remarked.

"For practical purposes, though," said the Thinker, "we

might get illuminating results if we carried out even crudely a combination of the experiments which I have just described. Do you care to try it?"

"Go ahead!" said the Student.

"All right," began the Thinker, "lay aside anything you have in your hands or your laps. Put your feet flat on the floor. Sit as comfortably as you can on these chairs. Now, close your eyes."

"No tricks!" warned the Student.

"I promise," the Thinker assured him. "The next step is to let go of your bodies. Really relax. Let go of your hands. Let them be as limp as wet oak leaves lying on fallen logs. Let your whole body be as limp as a sack of flour. Let go of all the tension in your faces. Let your foreheads be as smooth as a placid stream, reflecting the trees and the sky in the breathless silence of an utter calm. Let go of the puckers around your eyes. Relax your cheeks and the lines around your mouths. Think of your bodies as sinking deeper and deeper into a great, soft feather-bed of peace. Pay no attention to your breathing or to any other bodily sensation. Let your full attention turn to some definite subject in which you are intensely interested. Now I'm going to keep quiet for three minutes. At the end of that time I want you each to report, if you will, what kind of experience has gone on while your body has thus been out of the picture."

The silence came down over them, almost as if it had been tangible. No wind was stirring; the activities of the ship were at a low ebb; only faint distant sounds could be heard. If a tourist had burst into the cabin at that moment, he might have thought that these men were asleep, so motionless did they sit.

At length the Thinker asked them to open their eyes. They seemed reluctant to come back. For a while their bodies remained motionless. Then the Thinker turned to the Student. "What went on in your consciousness?" he asked.

The Student flushed slightly, but he spoke out: "I remembered the last time I was with my girl-friend back in the States," he said. "It was strange how vivid it seemed. I could see just the way her hair twines. The color of her eyes, the curve of her neck, the little, unconscious gesture she makes when she is

deeply stirred, the way her face breaks into smiles when she speaks, the very sound of her voice—it was amazingly real. I almost thought she was here.”

The Physicist spoke next. “I was thinking about a physics experiment I have been working at, here on the ship. I had been puzzled about how to arrange the apparatus. Now, I saw the whole problem clearly. And, suddenly the solution came like a flash. I saw just the way to work it out. If you don’t mind, I’ll write it down while it is fresh.”

“That question of determinism and free will was still in my mind,” contributed the Philosopher. “I was thinking about whether invariable sequence, when employed to carry out purpose, constitutes causation.”

The Theosophist was next. “I suppose we ought to be frank,” he started. “It may sound queer to you, but I seemed to go completely out of the body. I felt myself shooting up, inconceivably fast, till I was standing in some great cathedral-like place. It’s hard to describe. There really aren’t any words for it. I was standing before a majestic and shining individual who spoke to me without words, and said things I’ll always remember. I’d rather not tell what they were.”

The silence started to come back. Then the Student turned to the Thinker. “And what came to you?”

“I was thinking about the long, long struggle of life, up out of the ooze, of the slow evolution of man, and of his groping after truth and brotherhood. I was thinking of the bodies of babies shattered by air bombs, the weeping of their mothers, the hunger for power and glory by military dictators, and the half-formed Fellowship of those who struggle toward a better day of freedom, justice, and beauty.”

Again the silence, and again the Student broke it: “Well, the evidence is in. What’s the meaning of the experiment?”

“By approximating the first three steps in fractional distillation, we succeeded in dividing the patterns of our experience into two worlds of consciousness,” said the Thinker. “I suppose it is fairly clear what those worlds are.”

“You mean the material world and the world of consciousness,” suggested Workerson.

“Wait a bit,” objected the Philosopher. “I thought we had

agreed to be skeptics! As good solipsists what do we know about matter? Moreover, sight and sound are certainly part of consciousness if anything is!"

"Why not call it the sensory world that we shut out?" suggested the Thinker.

Here the Psychologist raised an objection: "You allege that you shut out the sensory world. But I'll venture to say that if I had had the right kind of electrical apparatus here, I could have detected thought-waves going on in the brain of the Theosophist, right through the time when he supposed himself to be out of his body. And I suspect that if those waves had stopped, all that inner world would have stopped too."

"Let us understand each other," the Thinker replied. "I am not assuming, at this point, either that the body can or cannot be wholly eliminated by the process of relaxing, however fully that process is carried out. I should like to discuss that with you later. But at the moment let us take this experiment simply as a basis of definition. Let us call 'the sensory world' whatever parts of our consciousness are necessarily eliminated, if we carry out thoroughly the processes of excluding sound, sight, temperature differentials, touch, and the like, as suggested in this experiment. And let us call 'the inner world' all those parts of consciousness which can continue when this process is thoroughly carried out, by normal people, under thoroughly favorable conditions."

"Then your inner world is whatever can be left over after you have completed your fractional distillation of the sensory part of experience," the Student observed.

"Right!" agreed the Thinker. "Our preliminary experiment in exploring that inner world was rudimentary, but perhaps you may be willing to suggest in general the types of experience-patterns which we find there."

"Memory, for one thing," the Student contributed.

"Imagination and planning," added the Physicist.

"Vision and inspiration," said the Theosophist.

"Values," concluded the Thinker.

"Wait a bit," the Student objected. "Bertrand Russell says that questions as to 'values' lie wholly outside the domain of knowledge."

"As thoroughgoing skeptics," replied the Thinker, "we are seeking to get back of all assumptions to the basic materials of our consciousness. You agree that the basic pattern materials of our consciousness can be classified into the sensory-world group and the inner-world group, do you not?"

"But isn't this inner world merely subjective?" the Student protested.

"What do you mean by 'subjective'?" broke in the Philosopher.

"Why, I mean things having no existence except in the mind of the one who thinks about them," the Student announced confidently.

"As thoroughgoing skeptics, I thought we had raised the question whether anything exists apart from the consciousness of the one who thinks about it," retorted the Philosopher. "As far as I can remember, we haven't agreed yet that there is any evidence for the existence of anything except the patterns which make up our individual consciousnesses."

"But I've never seen a value," persisted the Student.

"I've never seen an atom," retorted the Physicist. "But I feel pretty sure they exist. I've never experienced an atom in the direct, living way in which I have experienced love, hope, loyalty, and other valuations. No one has any direct experience of an individual atom. But everyone has direct experience of values and purposes. It is much less of a leap of faith to accept subjective values as real parts of knowledge than to accept atoms. By the way, this concept of the electron—where is it? In the sensory world or the inner world?"

"Why, in the inner world, I suppose—except when you are reading about it, or hearing it in a lecture."

"And the behavioristic theory of psychology—where is that?"

"Inner world."

"That is in spite of the fact that the behaviorist claims the inner world to be non-existent," the Philosopher pointed out.

"Besides," broke in the Theosophist, "who says that inner world experiences exist only in the consciousness of the individual? Have you heard about Professor J. B. Rhine's experiments at Duke University in telepathy and clairvoyance?"

"All right, all right, I give up," laughed the Student. "For

the time being, and subject to reconsideration, I'll take the inner world as on a fifty-fifty basis with the sensory world. Tell us again just what you include in this inner world."

"Let me report simply my own experience," replied the Thinker. "If I retire into a dark, breezeless, and silent room, relax in a comfortable chair and become unconscious of breathing, heart-beat, and the like, part of my stream of consciousness still goes on. I can still remember past events. I can still imagine people, places, objects and actions. I can still experience love, remorse, aspiration, beauty. I can still plan future actions. I can still dream. I can still call into consciousness such abstract ideas as capitalism, justice, courage. I can still reason. These experiences all belong to the inner world. That world includes all imagination, dreams, abstract thoughts, and values. It includes all my awareness of the past and of the future."

"Sounds as if the inner world were mighty important, the way you put it," the Student commented.

"You have been asking all along for some way to find meaning and significance in existence," the Thinker pointed out. "Where will those meanings be found—in the sensory world or in the inner world?"

"Meaning involves memory," the Psychologist pointed out. "Words would be meaningless except as we remembered their past associations."

"And memory belongs to the inner world," the Student conceded.

"Let me ask one final question on this point," the Thinker persisted. "If you had to give up one or the other, which would you choose to surrender—the sensory world or the inner world?"

"The sensory, of course," admitted the Student. "But say, wait a bit. If you should give up the inner world, you couldn't have the sensory. The inner world goes on all the time as long as you're conscious!"

Is the Outer World Real?

"JUST THE SAME, no philosophy of life you cook up in the inner world is going to do me much good unless it works in the outer world," Merchantson insisted.

"What makes you think there is any outer world?" queried the Philosopher.

"Well, if you're taking this solipsism seriously," Merchantson retorted, "I don't see what right you have talking to me as if I were doing my own thinking. Look here. I have a pal back in the States. He came to see me off when we sailed. His eyes are blue—at least that's what I've always thought. From what you said a while back, I gather that his eyes are really just an unknowable source of light waves of a certain length, and that the grip of his hand when we parted was just my subjective interpretation of interaction between two electron-swarms. Worse than that, I gather that you think I have no reason to suppose that there is any source for those blue light waves which I took to be his eyes, and that even the electron-swarm that I took to be his hand is one of my hallucinations!"

"Suppose a fellow has a girl-friend," the Student put in. "She looks square into his eyes and says she loves him. She says she's ready to marry him. It gives him a wonderful sense of there being something worth while in the world. But if she's just a bunch of patterns in the fellow's consciousness, isn't he just a poor deluded fool?"

"That pal of yours, back in the States," inquired the Thinker. "Have you ever been separated from him for any long period before?"

"I knew him during the first two years of high school. Then we went off to different prep schools, and I never saw him again until we were both juniors in college."

"Had he changed any in the meantime?"

"I didn't recognize him at all when we first got back together. He had grown about five inches; his voice had changed; he was a lot broader; he had taken to brushing his hair straight back; and he needed a shave. It took us a couple of hours to really discover each other again."

"Does that have any bearing on the question of whether this pal is an independent being in his own right or is merely a set of patterns in your consciousness?"

"Certainly I didn't have any conscious idea while we were separated that he was changing like that—my mind wasn't developing him, as far as I know anything about it," Merchantson asserted.

"I know a simpler illustration than that," spoke up the feminine voice. "If I put bread into the oven to toast, and go off and forget it, it goes right on burning when it gets to the right temperature, in spite of the fact that it's out of my consciousness."

"Here's another kind of example," contributed the Astronomer. "Thousands of years before Christ, Egyptian astronomers were struggling with the problem of how to make the calendar year come out even with the real year. They had a 365-day calendar, but it kept getting out of adjustment, because they had no extra day at leap-year. But they figured out that their calendar year caught up with the true year once in a Sothic cycle of 1460 years. In other words, they calculated that the true year is 365.25 days long. But the Maya Indians in Mexico, long before Columbus arrived, were working at the same problem. They had a totally different language, a totally different system of writing, and a radically different system of arithmetic. But they worked out a system according to which the true length of the year was 365.242 days. Modern astronomers calculate it at 365.2422 days.

"The simplest and most rational way to interpret these facts seems to me to be to assume that, regardless of whether human beings thought about it or not, our real earth was spinning on its axis at a certain rate of speed, and was moving along in its orbit around the sun at a certain rate of speed, and that when men studied the matter accurately enough, no matter what

language or system of mathematics they used, they were bound to get approximately the right answer.

"As a scientist, I find it useful to assume that the same thing applies to all the rest of the universe. Billions of snow crystals form their lovely patterns in the upper air and fall in wildernesses, whether men's eyes ever see them or not. Billions of minute organisms live out their tiny lives in uncounted ponds, whether or not the biologist gets them into view in his microscope. Millions of suns go through their vast explosions whether or not the astronomer sees them with his telescope. Ultra-violet light was streaming through the universe all the while that man was in ignorance of its existence. I feel driven to admit the existence of a reality outside the normal consciousness of human beings."

"In a way, it's just the opposite of the free-will problem, isn't it?" Merchantson suggested. "There we were arguing whether there was anything in the universe which we as individuals control. Here we're probing whether there's anything in the universe which we as individuals do not control. On the free-will question we had to agree that there are a lot of experience-patterns that we produce on purpose, but that a lot of other patterns coerce us against our will. Can you be coerced by something that's purely a subjective hallucination? Anyhow, now we face the fact that some of our experience-patterns are quite unpredictable, some go on developing systematically when we're paying no attention to them, and some turn out on investigation to be built upon the most complicated systems of scientific law, beyond even the comprehension of most of us. If that doesn't mean that there is a real outer world, lying back of our sense experience, I'd like to know what!"

"You're giving me back my material world in great shape!" gloated the Student.

"Are you clear back in the place you started from?" the Thinker quizzed.

"No; you're right; I'm not. When I started I thought the material world was something to be taken for granted, while consciousness and values had to be proved. Now I'm forced to recognize that the reality of the outer world is something that

has to be proved, while consciousness and values are the most immediate realities in existence. But how about my girl-friend? She still seems kind of hypothetical, according to this argument."

"Start with her face," the Thinker suggested. "Is that real?"

"Sure, her face is real, if all these arguments about the outer world hold good. She has a body that must be just as real as my body. But does she have a sensory world and an inner world like mine? Does she have purposes? Can you prove it, or is it just a guess?"

"Suppose she went through the experiment which the Thinker called fractional distillation of consciousness," queried the Psychologist. "Would she experience results similar to those which you got? What makes you think so?"

"She has eyes that turn toward me when I speak to her, and that look like mine in a mirror (only hers are violet colored). She has ears, and she stopped them up once when she didn't want to hear what I was saying. The boys down at the medical school have cut up a lot of human corpses, and they tell me that brains and nervous systems are pretty much standardized. So I expect it's likely that my girl-friend would shut off just about the same parts of her experience-patterns as I do when she went into a quiet room, and relaxed. And I suppose she'd have still operating the same general kind of inner world I have (only with some of the ugly things left out, I hope, and a lot of things there about purity and religion and all that that I don't have)."

"It isn't just that other people have the same kind of bodies that I have," broke in Merchantson. "They act pretty much the same way I do. I see them laugh, cry, grasp, shrink away, eat, drink, dance, go to movies, study, and come out of examinations bathed in gloom, the same as I have done. They say words that I understand, and they understand the words I say—at any rate, we couldn't possibly work together, the way I can work with some people, unless we really understood each other."

"As far as other people having inner worlds like mine, I can test it by experiment," suggested the Psychologist. "If I ask my brother whether he remembers that old attic where we used

to play, he not only says he remembers it but he begins asking me whether I remember the trunk we opened up that day, and the old-fashioned clothing we toggled up in. And his words describe my own memories. Furthermore, the fact that it is possible for us to discuss with each other such matters as mathematics, science, law, and philosophy, depends upon our having inner worlds which fit with each other rationally."

"Yes, but how about values," demanded the Student. "How do you know that they have the same values that you do?"

"I observe that most healthy people like fruit juices and dislike castor oil," remarked the Sociologist. "Most people respond with pleased excitement to being praised, and shrink from harsh criticism. Most people show signs that they enjoy being healthy, and try to escape from pain. Most people rejoice when their income increases, and protest having their incomes cut. Such facts suggest (though they do not prove) that other people's sensory experiences are probably more or less like mine. But as far as values are concerned, it's perfectly obvious that they conflict a good deal of the time. We talked that out more or less fully before you launched us into all this solipsism out of which we are just now emerging."

"But purposes—how do you know that other people have purposes like your own?" the Student pursued.

"Look here," Merchantson retorted. "You agree that you have purposes, and you know how you act when you're trying to carry them out. Don't you see other people acting that way? Don't you see them working at problems, trying to get a dance date, sweating on some engineering job, planning their vacation, issuing orders to servants and employees, writing letters, and doing the same kind of things you do when you're carrying out purposes? If you and I agree to meet on the shuffleboard deck after supper, I have to act purposefully to carry out my part of the engagement, and I think it's safe to assume you do too."

"The other day I saw two small children, each under two years old," interjected the Thinker. "One child was bawling at the top of its lungs. The other was standing with open-mouthed and absorbed interest, staring at the one who was

crying. What do you guess was in the mind of the observing child?"

The Student got there first with his answer:

"I'll bet he was saying something like this to himself—not just in these words, but this general idea: 'That little boy fell down and bumped his head. Yesterday I fell down and bumped my head. That little boy is making a big howl. Yesterday, when I fell down, I made a howl like that. When I bumped my head it hurt like everything. I s'pose his head hurts like mine did!'"

"We would never have personalities at all unless we kept using other personalities as mirror selves, like that," the Psychologist asserted. "We interpret our inner experiences in terms of other people's outer behavior, and other people's outer behavior in terms of our own inner experiences."

"Not only that," added the Sociologist. "Sympathy, the sense of justice, and all the social adjustments to which they give rise, seem to spring fundamentally from that process of putting the self into the place of the other, and the other into the place of the self."

"But all this is just maybe," objected the Student. "You say, 'It's safe to assume,' or 'Such facts suggest,' or 'I feel driven to admit.' Where's your proof that the world is real and that other people are conscious beings like ourselves?"

"What things can you prove?" asked the Thinker.

"Oh, that seven times eight is fifty-six, for example," the Student retorted.

"In pure mathematics," remarked the Astronomer, "we set up the conditions ourselves to begin with, and so we can reach conclusive proofs. But can you prove anything conclusively outside of pure mathematics?"

"Not in psychology," volunteered the Psychologist.

"Nor in biology," said the Biologist.

"Nor in physics," added the Physicist.

"Then how does science get along?" the Student demanded.

"By building on the best probabilities that can be developed," the Physicist answered.

"But will that work in life as a whole?" persisted the Student.

"If not, you're out of luck!" Merchantson pronounced.

"Let me raise another difficulty," interposed the Philosopher. "You say that these patterns, like your friend's body, the solar system, and ultra-violet light, exist whether or not any human being pays attention to them. Now these are patterns in your sensory world—or at any rate, in your sensory and inner worlds combined. When we were being thoroughly skeptical, we agreed that the warmth of your friend's handclasp, the colors of the spectrum, and the observations which you make of the solar system must be in your mind rather than in any outer object. If you now insist that the outer object really exists, what is it like? All you know about it comes through your sensory world. Are you going back to the old metaphysical idea of a kind of 'substance' in the outer world, which has no characteristics that you can know about—a sort of unknowable phenomenon?"

"I say," demanded Workerson, "is Charlie Chaplin unknowable—I mean by the millions of movie-goers who never will talk face to face with him or shake hands with him?"

"They know him—really and vitally—by means of billions of shadows, flickering swiftly over thousands of silvered screens," the feminine voice insisted.

"How about Napoleon Bonaparte?" queried Merchantson. "None of us ever saw him, or heard him speak, or touched him. Does that make him unknowable? Can't we know him through symbols—paintings, history-books, biographies, dramas? Can't we even get to know him better than most of the people who served him his mutton, or loaded his cannon?"

Here the Psychologist took a hand: "If I know about a thing that it is the kind of object that gives me the sensations round, smooth, solid, heavy, juicy, sweet and the like, and that this kind of object gives similar sensations to other people, I know a lot about it, even though the color, shape, weight and taste be all in our minds.

"If we walk around a chair, the image of it which we see will change continually. Yet we take it for granted that we are looking at the same chair all the time. If a circle of people stand around a chair, all looking at it at once, each sees a different sensory image. Yet they will agree that they are all looking at the same chair. I propose to take it for granted that the

real chair is the kind of an object which gives rise to all these different sensory views. If the chair is examined with x-rays, or under a powerful microscope, or by a chemist, new facts about it are discovered. I shall act on the assumption that the real, outer-world chair is the object which gives rise to all such data. The chair has had a history; perhaps it has been refinished repeatedly. Yet we think of it and speak of it as having been the same chair all the time. We know that it will have a future, and we take it for granted that it will still be the same chair, until it is broken up, rotted away, burned, or otherwise destroyed. The outer world, as I am defining it, consists then in that which lies back of and produces our sensory worlds—present, past, and future—but which exists whether we sense it or not.”

“Then the real object,” said the Philosopher blandly, “is in your view simply the sum total of all the sense data which would be presented by the object, at all possible points of observation, if there were in fact an object. And, since the sense data are really in your mind, not in the outer world at all, the ‘object’ which you hypothecate is merely a mental abstraction!”

“Why do you keep assuming that raw sense experience is the only way to know a thing?” demanded the Physicist. “We agree that objects exist in the outer world. Knowledge about these objects is not merely a collection of sense data. Knowledge is a means of successful living. We really know an object only when we understand it well enough to predict what experience it will give us in the future, and to know how we can use it to carry forward our purposes. Seeing, hearing and touching a thing are mere helps toward such knowledge. We need other aids—instrumental measurements and records, memory, association, analogy, inference, mathematical analysis. Everything is knowledge that helps us understand objects and use them successfully, even though the objects be unseen, unheard, intangible.”

The Student turned to the Philosopher: “All quibbling aside,” he asked, “do you or do you not believe in an outer world, containing real, self-existent objects?”

“Of course I believe in a real outer world,” the Philosopher

declared. "So do almost all philosophers. But I have not been quibbling. I am simply trying to show how inadequate and confused common-sense ideas about reality are. Philosophers are seeking to induce the thinking public to adopt a sounder metaphysic."

"Not really!" exclaimed the Student. "Here we are again, all agreeing!"

Powers of the Inner World

"THOSE EXPERIENCE-PATTERNS we started with seem to be organizing themselves into a kind of system," Merchantson observed. "There's the outer world, which we agree exists, and which is not just a kind of summary of sense experiences. Then there's the sensory world, where we get what you might call our raw information about the outer world—our contact point with outer reality, as it were. And then there's the inner world in which are all the meanings, values, memories of the past, and planning for the future. Pretty neat, I'd say!"

"That inner world," the Student questioned, "—it seems important—crucially important if you like, since life itself hasn't any meaning for us unless we have inner consciousness. But it's so vague. What can you do with it? And isn't it true that no two people agree about their introspections into their inner worlds?"

"The inner world might be made an extremely useful laboratory," observed the Physicist. "When the Thinker first had us shut out the sensory world, I successfully performed an experiment which I had not been able to carry out hitherto in the outer world. I actually obtained creative results."

"Have you ever heard how Watt invented the steam engine?" the Sociologist inquired. "He'd been asked to repair an extremely inefficient type of steam pump which was used to get water out of mines. Steam was injected to push up a piston in a cylinder. Then cold water was squirted into the cylinder to condense the steam, and air-pressure forced the piston back into the resulting vacuum. Watt calculated that heating the cylinder up and then cooling it off for each piston-stroke wasted three-quarters of the steam. He had been puzzling over how to make the pump more efficient. One day he was out walking. Suddenly the idea for his steam engine flashed into

his mind. The engine was to have a separate condensing chamber, which could be kept continuously cold, and a jacket around the piston-cylinder to keep it continuously hot. That was certainly a creative inner-world idea. Watt made a sketch immediately. After protracted effort he succeeded in getting the sketches embodied in a working model. That model was a large factor in promoting the industrial revolution."

"Have you heard of Dr. George Washington Carver, the Negro chemical genius?" the Physicist asked. "He claims to get his ideas by inspiration from above. Wherever he gets them, he has developed hundreds of new chemical methods for using sweet potatoes and peanuts. There is no question about the creative fertility of his mind."

"Agassiz had an experience which fits in here," remarked the Biologist. "He dreamed three nights in succession about a fossil fish on a stone slab which, in his waking hours, he had been trying for two weeks to identify and classify. On the night of the third dream he had paper at hand, and drew a sketch of what he saw in the dream. In the morning he saw features in this drawing which he thought it impossible that the fossil fish should reveal. With the sketch as a guide, he chiselled more stone away on the slab, and found hidden portions of the fossil which corresponded with the dream and the drawing, enabling him to solve the problem which had baffled his waking consciousness."

"I know a woman who has patented a number of machines of which complete models came to her in her dreams," the Psychological Researcher put in.

"Do any of you know Professor Ralph Harlow of Smith College?" inquired a Unitarian who, until now, had been an interested but silent member of the group. "Harlow was a friend of Howard Walters, who wrote the well-known hymn called 'I Would Be True.' Some years after Walters' death, Harlow dreamed of him. In the dream, Walters repeated to Harlow a new poem in the same meter as 'I Would Be True,' and insisted that Harlow should write it down. After the same dream came to him a second time, Harlow wrote out the poem. It was published and has been widely used."

"Are you trying to suggest that Harlow got his poem from

Howard Walters' surviving spirit?" the Psychologist asked skeptically.

"Wherever it came from, it illustrates the creative possibilities of the inner world," the Unitarian pointed out.

"Well yes," agreed the Psychologist. "For that matter, I dare say you are all familiar with the fact that Robert Louis Stevenson used to be able to go to sleep when he needed to write a story, and a fresh and fascinating plot would unfold in a dream—a plot which was just as new and exciting to him, when he viewed it, as to anyone else."

"Did you ever hear that novelists—I'm thinking of Hugh Walpole and others—often claim that the characters seem to emerge spontaneously?" the feminine voice added. "The characters seem to have wills of their own. They take charge of the development of their own stories. And you know many of the great composers have said that they just write down the music which they heard with their inner-world ears. It's the same with many great painters. They have seen the pictures so vividly that they seemed to themselves to be copying them from an outer vision."

"But how do you account for all these creative processes going on in the inner world?" the Student demanded.

"Who invented Latin grammar?" queried the Thinker.

"Whoever it was, I'd like to catch him alone some night!" muttered Merchantson.

"Probably it was the guy that wrote the grammar book we had to study," guessed Workerson. "But what's that got to do with the subject?"

"Of course not!" the Student retorted. "Some old chap back in Caesar's time must have done it. They had Latin grammar parchments two thousand years ago."

"Nobody invented it," announced a white-bearded Classicist who had been listening silently until now. "Language structure was there inherently; the grammarians merely recognized it and wrote it down. In the process they developed it somewhat, but they no more invented it than the writer of a dictionary invents the meanings of the words he defines."

"For that matter, who invented logic?" the Philosopher followed up.

"I ought to know," volunteered Workerson again. "I flunked the logic course twice. All the modern logicians stole their stuff from John Stuart Mill."

"And Mill cribbed it from Aristotle," retorted the Student.

"And Aristotle discovered it in the very fabric of human thinking," supplemented the Philosopher.

"I thought a lot of the big boys in philosophy were fooling around with non-Aristotelian logic these days," the Student objected.

"True enough," admitted the Philosopher. "Various systems of logic are possible. But all the valid ones reflect structure that is inherent in thought-processes which occurred long before the logicians wrote them down."

"Would you say the same thing about mathematics?" the Student asked the Astronomer.

"Mathematics is a form of logic, and I agree that it is discovered rather than invented," was the reply.

"Does anyone see any connection with what we have just been discussing and what we were saying some time ago about electrons, atoms, cell colonies, families, leagues of nations and the like?" the Thinker queried.

"Organizing process!" exclaimed the Student. "It works in the inner world, same as in chemistry and biological evolution and political development. Words organize into syllogisms just the way molecules organize into crystals. All you have to do is give 'em a chance!"

"What's all this got to do with building a new world order?" Workerson demanded. "Here the world's burning down, and you fellows suggest getting off into an ivory tower and speculating about the chemistry of combustion!"

"That tremendous revolutionary experiment that you love to talk so much about," the Student demanded, "—where did it gets its start?"

"Why, in Russia, when Lenin and Trotsky overthrew the Kerensky government," Workerson answered, a little doubtfully.

"Not by a long shot!" retorted the Student. "The Russian experiment in collectivism took its rise in the inner world of a German who died in London more than thirty years before

Lenin and Trotsky pulled their coup. His name was Karl Marx."

"Say, I know a lot more about Marx than you do. But I get your point. If you're going to use the inner world for something really creative, I'm all for you. Only come on down out of the clouds! Tell us how to get practical in your inner world!"

"But say, it is practical!" exclaimed Merchantson, as though illumination had just dawned on him. "The automobile industry started as an idea in somebody's inner world. So did the moving-picture industry and the aviation industry!"

"They started as ideas in the minds of a whole series of people," the Sociologist corrected. "Scores of inventors contributed to each of those industries. The day of the solo inventor is quite largely past."

"How about Thomas Edison?" queried the Student.

"But look!" Merchantson persisted. "This organizing process heads up, as far as human beings are concerned, in the inner world. Now in business and industry, organization is the whole key to success—I mean organization all along the line—organization of ideas, industrial planning, fitting resources together, seeing in advance how things are going to work, and all that. If a fellow could really learn the ropes in this inner world—really get the hang of the thing—couldn't he get to be a big shot—and do a lot of good, I mean—make things cheaper that people need, and pay higher wages, and give the men working conditions the like of which the world hasn't seen yet? What I want to know is how to operate the process. How do you get it going and make it work?"

"In order to have the organizing process operate successfully in the outer world, what conditions are necessary?" the Thinker explored. "Take the development of any embryo in its mother's womb for an example. What conditions does it require?"

"A fertilized ovum, suitable raw materials in the form of nutrition to work on, freedom from interference, and what might be called climate—that is, the right temperature, being surrounded by the placental fluid and the like," the Biologist explained.

"Much the same for a snow crystal," the Physicist volunteered. "There is no fertilized germ, of course, but there is the central water molecule. Then there must be raw materials, in the form of other water molecules. Freedom from interference is essential; highly organized snow crystals form only in relatively quiet air. Climate is vital, of course, for temperature conditions must be just right."

"Is it the same thing when the organizing process is producing a city, instead of a crystal or a baby?" the Thinker asked.

"Offhand, I think the analysis checks moderately well," the Sociologist responded. "The original settlement corresponds with the fertilized ovum or the central molecule. The raw materials are provided by forests, quarries, mines and agricultural crops in the city's hinterland, and by streams of migrants. Freedom from interference is important in terms of absence of obliterating disasters, such, for example, as those which destroyed Babylon, Carthage, Troy, Pompeii and other cities. Climate is a factor, but we need to add topography—such as location on a good harbor, or at a water power, or at the junction of two large rivers."

"And you're driving at the proposition that the creative process in the inner world needs similar conditions," the Student anticipated. "You're going to say that if a chap wants to have big creative ideas sprout in his mind, he has to pack in a lot of raw materials—like case studies, and experiments and general life experience. Then he has to have a germ idea from somewhere. Then he has to cut out interference by getting off into your dark room, shutting the sense channels, and relaxing. And he's got to give the process a favorable inner climate. And then inspiration ought to pop!"

"But inventions, 'hunches,' plots for novels and creative ideas generally, are apt to happen almost anywhere except in a dark room," the Psychologist objected. "Scientists report that their creative ideas turn up when they are out walking, or shaving, or reading a book on some other subject, or perhaps just after waking in the morning."

"Graham Wallas says there are four stages—preparation, incubation, illumination and verification," the Sociologist put in. "Preparation involves gathering the raw materials. Incubation

gives a chance for the organizing process to go on in the subconscious, without interference and under a suitable climate, whatever that may involve. Illumination occurs when the creative result bursts forth into consciousness. Verification occurs when the creative idea is tested out under working conditions in the outer world."

"But, see here," the Student pursued. "You're describing the ways in which scientists and creative artists have stumbled into inspiration. If you went about the process deliberately, systematically, intelligently, maybe you could step it up and make it a lot more efficient and powerful."

"Just how would you go about stepping it up?" Merchantson asked the Thinker. "Isn't there some way to improve this inner organizing process so it won't be so much a matter of accident?"

"Yes," replied the Thinker. "The inner organizing process can be stepped up, if you're willing to go through the drudgery of learning how to do it. By a long process of inner practice it is possible for some people to get to a point where any problem which they face can be put on the clear road to solution, and where the courage and the power to go forward on any vital task, however difficult, can be made available."

"But how do you do it?" demanded the Student. "Show us the way to get this inner light and energy if it's such a sure thing. It must be just a matter of experiment and exploration, from what you've been telling us."

"And inner discipline," the Thinker added. "Perhaps one more of these experiments may help to make clear why so few people are making full use of these creative powers. Please all relax and close your eyes once more." The company again settled into silence and outer passivity. "Now without further word beyond these instructions, please carry out four steps inwardly. First, think of a specific beautiful object, such as a rose, opening in a vase in a definite spot in a room with which you are familiar. Watch this rose until you can perceive every detail of its stem, its leaves, and its petals—every curve, tint, shadow and scent. After you have done that for several minutes, take the second step: think about roses in general—first, this particular variety as a group, and then roses as a species. Bring back to mind all that you know about roses—their botanical

structure, their evolution, their history, their use in art, their place in commerce, and so forth. Third, think about all the other classes of beautiful objects which you can recall—buildings, paintings, people, poems, musical compositions, and the like. When you have done that for several minutes, take the fourth step: stop all thinking about specific objects and about abstract ideas clothed in words. Hold on only and purely to that which lies back of the word 'beauty' in all the fullness of its meaning."

"Say," broke in the Student, "you're carrying ahead this fractional distillation of consciousness, aren't you?"

"In a way, perhaps," admitted the Thinker. "But let us see how far you can go with it in ten minutes."

The time seemed to stretch out incredibly. Finally the Thinker broke the silence: "Tell us, Workerson, what went on in your inner world during this experiment."

"Well, I'm afraid I wandered off from what you told us to do," he confessed. "I started with a rose, and right away the words 'bread and roses' came into my mind, just as if someone had spoken them. Then I jumped to a breadline where I once waited for a handout. And the man who was giving it out got sore because I wanted an extra piece for a pal who was sick. And that made me think about all the hypocrisy of charity, and how it's only to keep starving folks from really upsetting things and getting honest-to-goodness justice. And then I found myself on a loud-speaker truck, talking to a crowd of unemployed, and telling them how they are getting cheated. You interrupted me right in the middle of a sentence."

"I wandered off too," Merchantson admitted. "I started with a rose, and got that clear in my mind. It was a beauty, too! Then I thought about roses in general, the way you said, and I remembered that you spoke about the place of roses in commerce. So I started off on greenhouses. Then I thought about florist shops, and I wondered how far the chain type of retail organization had gotten in the flower business. That made me think of the laws that legislatures and Congress have been passing, putting obstacles in the way of chain stores. That made me kind of mad. I got to thinking how the demagogues keep getting votes by pestering the very people that are trying to reduce the

cost of living and bring higher wages by efficiency. How can business men be efficient when Washington is always thinking up new obstacles and burdens? Well, you broke in on me about there."

"That is an interesting exercise," commented the Philosopher. "I must try it in one of my classes. I began with an American Beauty rose. Then I thought of that variety in relation to other kinds. Roses in general seemed rather hard to define when I got off into the fringes. I began to want to get the Biologist to tell just what differentiates them from closely allied flowers. Then the word 'flowers' started me off on the question of whether abstract ideas have real existence or not. Your conception of the inner world has interesting connotations in that connection. I began comparing it with Plato's idealism, and then comparing Plato's position with Kant's and Whitehead's. Then I heard you speak to Workerson."

"When we got to beautiful objects in general, of course I thought about my girl-friend," started the Student. "Say!" he broke in on himself—"look here! We've each one of us got a set of passionate interests—emotional complexes, I suppose the Psychologist would call them. When we get to thinking in our inner worlds, we jump off the track into one of our particular hobbies, or grouches, or crazes. Maybe it isn't strong enough to hold us, and we wander off to some other set on the first good link that comes along. We're like monkeys in an inner-world forest, jumping from the branches of one tree to the branches of the next. And we get to have certain pathways that we follow in the jungle of our own minds."

"If you imagined the monkey carrying a lantern through the tree tops of his jungle at night, it wouldn't be such a bad figure," suggested the Psychologist. "The light of the lantern represents what we call 'attention.' The branches of the trees and the three-dimensional jungle trails correspond with the network of emotional, habitual and intellectual association-patterns of the mind."

"And how does all this apply to stepping up the inner-world powers?" Merchantson inquired.

"If one works at it for enough years, with daily periods of applied practice," the Thinker responded, "one can train one's

monkey not to jump around so erratically. One can increase the candle-power of one's lantern. One can, in time, begin to perceive the jungle as a whole, and its place in the continent and in the world at large. Leaving the monkey figure behind, one can, by means of the inner discipline called meditation, acquire mastery over one's own mind—develop that crucial power of the inner world called concentration of attention. Gradually, by that means, we can learn to rise beyond the level of particular inner images, through the level of word-clothed abstractions and principles, up into the wordless and imageless level of swift and flashing illumination."

"Are you speaking of the causal plane or the Buddhic plane?" the Theosophist inquired.

"Is this Buddhism you're talking?" Workerson demanded.

"Buddhists conceive of the aim of existence as being to escape from bondage to what they regard as the illusion of the outer world and the world of inner images, into Nirvanic bliss of oneness with the Absolute," remarked the Philosopher.

"Each of us must make his own choice," said the Thinker. "For one, I prefer to move toward functional oneness with Reality in all its richness, rather than to melt all the sharp details of experience into one mass. To shrink from the outer world would, for me, be to evade Reality at a vital point. But to return to the question of the Theosophist. When one begins to awake to the inner world, and to move about in it with increasing self-mastery, one becomes aware that it is far more complex and vast than one had ever conceived. However far we go, we discover that there are regions beyond the beyond. How we label these regions depends largely upon the school of thought in which we have been initiated."

"But say," interjected Merchantson, "suppose a fellow had a vivid imagination and a strong set of prejudices—suppose he was conceited, or thought all Jews were cheats, or something like that—couldn't he meditate, and hatch a large crop of wishful thinking in his inner world, and deceive himself into believing that they were divine inspirations or something?"

"Certainly," the Thinker agreed. "That is one reason why all the great religious teachers have warned against seeking to cultivate inner powers unless one is willing to purge oneself

from all disintegrative desires. It is a reason, also, why inner illuminations must be checked searchingly by outer discussion, experimentation and verification."

"Then the inner world is the creative and dynamic center, in which one may find vastly increased wisdom and power to grapple with the problems of the outer world," the Student concluded.

"But the path of discipline is rigorous, and long," the Thinker warned.

How Do We Find Truth?

THE STUDENT'S NEW enthusiasm over the powers of the inner world did not satisfy Merchantson. "There's a man in our town," he persisted, "who thinks that if he bows down in front of a kind of altar he's rigged up, and then takes a pencil and writes whatever comes into his head, the Holy Spirit will reveal the truth to him—kind of a new Bible he thinks he's writing. That's something like your meditation process, isn't it? How can you tell whether these 'illuminations' or 'revelations' are the truth or just bunk?"

"There's a fellow in our town who had a revelation that he was Jesus Christ," chimed in Workerson. "They're boarding him free now, out at the state hospital."

"The way of the mystic has certainly been one of the ways by which men have sought for truth," the Philosopher observed.

"Well, how does he know when he finds truth?" demanded Merchantson. "What's his test?"

The Psychologist replied: "Mystics claim an inner sense of certitude. They insist that they know truth directly, through inner intuition. But Leuba's studies in 'The Psychology of Religious Mysticism' show that any information they obtain has really come to them through their senses."

"How about telepathy and clairvoyance?" demanded the Psychical Researcher. "Might they not get real 'extra-sensory' information in their meditations?"

"You take Rhine rather seriously, do you not?" the Psychologist parried. "Well, Rufus Jones is reputed to be one of the greatest living mystics. He admits that whatever mental help the meditator gets inwardly comes in the form of organizing his ideas, clearing them up, and giving them energy."

"The method of the mystic is only one of the ways of seeking truth," the Philosopher reminded them.

"It was the way of all the great prophets and seers!" retorted a Methodist minister who, until then, had been listening silently. "It was the way of Jesus, and Isaiah, and Paul. It was even a way used by Socrates and Plato."

"But just look how these 'thus-saith-the-Lord' people contradict each other!" Merchantson objected. "Each prophet, with his followers, thinks he has the truth exclusively from on high!"

This gave the Astronomer a cue for which he had been waiting. "When you point out the inconsistency between the alleged revelations offered by competing mystics," he observed, "you are applying a different criterion of truth. You are suggesting that at least one fundamental test is consistency. By using that test thoroughly, we might develop a reliable and comprehensive system of ideas to interpret the universe."

"How?" the Student demanded.

"If one begins with elementary or fundamental statements known to be true, and if one defines carefully just what each term means, one can build up a structure of truth by discovering what propositions are consistent with and follow necessarily from these basic axioms," suggested the Astronomer.

"That's pretty abstract," Workerson protested. "Can't you illustrate it so we can see what you mean?"

"Suppose you start with the definition of a straight line as the shortest distance between two points, and the definition of an angle as the fraction of a complete rotation through which one line would have to turn in order to coincide with an intersecting line," the Astronomer complied, drawing the diagram on a block of paper as he proceeded. "Add to these definitions the axiom that, if you subtract the same from two equal amounts, the remainders are equal. From those definitions and that axiom you can prove that when two straight lines intersect, the opposite angles are equal. All geometry—and, indeed, all mathematics—is built up by thus deducing new truths from previously established truths. When the mathematicians work out a demonstration there need be no dispute about whether or not it is true."

"Why not build our whole system of truth that way, then?" asked Workerson.

"Chemistry seems to have moved in that general direction

lately," the Physicist remarked. "More and more attention is being given to accounting for chemical reactions in terms of the geometrical arrangements of atoms in molecules."

"When you talk about deducing truth from previously established principles—isn't that the way they go about it in the law courts?" Merchantson asked. "They start with statutes, or principles of common law, or supreme-court decisions, and they argue it out logically, with precise definitions of terms, and rules of evidence, and all that. Each lawyer picks out the weaknesses in his opponent's logic, and the judge decides which side of the case fits in with the body of established law."

"Five-to-four decisions in the Supreme Court!" Workerson jeered. "Are you going to build the structure of legal truth on axioms like that?"

"But this method of picking out weaknesses in the other fellow's logic," the Student observed, "—it's like the Socratic method. You ask each other questions, and try to define terms and get back to basic agreements. It's really what we've been doing here in this discussion."

"That method of dialectic was the basis of what was perhaps the greatest flowering of the human intellect in all history," enthused the Classicist. "It brought the high crest of the age of rationalism in ancient Greece—the age that gave birth to Plato."

"And that crest of rationalism was followed by the greatest trough of skepticism, self-doubting and intellectual uncertainty that the centuries have seen," the Unitarian retorted. "Sorokin has shown that vividly in a chart in his 'Social and Cultural Dynamics.'"

"Nevertheless, logic is the fundamental method of truth-seeking in metaphysics," insisted the Philosopher.

"And you fellows that have been using it—how far have you gotten toward universally accepted truth?" Workerson demanded. "Where's your body of established agreements that philosophers in general accept?"

"But look here!" said the Student. "We can't understand each other at all unless we agree on definitions. You can't build up any system of truth that a man of intellectual integrity can accept if it's full of inconsistencies and contradictions!"

"You young men have overlooked one great principle in your discussion," said the Methodist minister. "Jesus said in his farewell prayer, 'Thy word is truth.' There is the clue you have been looking for. Even if you refuse to accept the fact that the Bible is inspired, you must surely be impressed by the fact that it has survived as a basic guide of life for millions of people through nineteen centuries. When you search for truth, the winnowed wisdom of the race ought to count for something!"

The Classicist hurried to support this new ally. "Most of the fundamental problems which you have been raising were threshed out twenty-two hundred years or more ago," he remarked. "Modern thinkers keep coming back to the Stoics and to other ancients. Modern systems of government and of law go back to the Romans and even to the Code of Hammurabi. You talk about experiment as a way of testing truth. How about the thousands of years of experimentation in human experience, out of which the tried and tested has emerged?"

"Validity has survival value," contributed the Sociologist. "In the long run, organized society by its approvals and disapprovals selects and perpetuates the adequate, according to Giddings."

"Oh yeah?" Workerson rejoined. "Nice adequate and permanent society we live in! Experience through the centuries has given us a swell set of ideal governments, and a financial system that acts like a colossal pump to drain off wealth into the coffers of the powerful! Adequate for the gang on top, maybe. The war system is a good example of a social survival that's prospering. If you chaps were right, the older a piece of tyranny is, the more sacred it ought to be. On that basis, husbands would still have the right to spend all their wives' earnings. Fathers would still have the right to sell their sons into slavery. Ships would still be rowed by galley slaves."

"Are we not getting away from the question of how to test truth?" the Philosopher suggested.

"All right," retorted Workerson. "Apply the same thing to science. If the age of an idea were a good test of its truth, we'd still be believing that the sun revolves around the earth, or that the king's touch cures scrofula, or that lightning is a bolt hurled by a god up in the sky, or that you get rain by praying for it!"

"The Middle Ages were dominated by a combination between this traditionalism and rationalism—between dependence on the ancient authority of Aristotle and the Bible and on the dialectic of the Scholastic theologians," the Sociologist remarked. "Are we eager to go back to the Dark Ages in our criteria of truth?"

"You young critics have considered three different criteria of truth, and rejected each of them as inadequate," the Philosopher pointed out. "You rejected the inner certitudes of mystics because they lead to contradictions and inconsistencies. Then, you rejected the consistencies of the logicians as leading to skepticism and to disagreements. Finally, you have rejected traditional authority, and the agreements which emerge from the winnowings of time, as embodying frequent absurdities. Very well; what have you to suggest? Suppose you become constructive now and tell us how you propose to find the truth, and how you think you will recognize it when you find it!"

"Why do you need to know the truth?" asked the Thinker.

"I don't want to be fooled!" Merchantson exclaimed.

"You're just saying the same thing over in different words," objected the Student.

"No, I'm not. I don't want anybody to make a monkey out of me."

"They don't have to—germ plasm did that!" retorted Workerson, mechanically.

"Well, I want truth for something a lot more practical than that," the Student observed. "I need truth in order to find my way around in a confoundedly bewildering world."

"Sure," Merchantson agreed. "I want truth for practical reasons too. I want to know how to succeed."

"To succeed is to carry out purposes; to carry out purposes requires the power to predict," observed the Physicist. "If you want to build a bridge, you have to have engineering formulae that predict how much load a given girder or cable will support."

"And if you want to cure a disease," the Biologist added, "you need to know the truth—at least approximately—about how certain drugs or serums will react on the patient."

"Social purposes can't be achieved without cooperation," the Sociologist pointed out. "And cooperation is impossible without

some degree of mutual understanding. Understanding means knowing the truth about each other, more or less—being able to share purposes and plans.”

“Doesn’t this all boil down to being able to predict and control?” the Student asked. “We know the truth if we’re able to control. And even if we can’t control, we know the truth when we know how things are going to act, so that we can adjust ourselves the best way possible.”

“Thoroughly utilitarian!” commented the Astronomer, smilingly. “Am I the only one who values truth for its beauty—for the sheer satisfaction of apprehending the coherent patterning of reality?”

“If a mere philosopher may raise a basic question, is truth to be found in terms of consistency (or coherence) between the ideas that lie back of your symbols? Or is it a matter of correspondence between the ideas and the outer reality which they claim to represent? In other words, is truth purely a matter of ideas, or is it a relationship between the outer world and your symbolic summaries?”

“A statement is true if it correctly describes the outer world,” announced Workerson. “If an employer says, ‘I pay my day laborers twenty dollars a week,’ the truth of that statement is to be checked up by looking in the pay envelopes, not by philosophical argument.”

“When you say ‘looking in the pay envelopes,’ are you talking in terms of the outer world or of the sensory world?” queried the Philosopher.

“Well, the real dollars are there, aren’t they, if the employer is telling the truth?” Workerson demanded.

“We’re getting right back to the old discussion about whether the outer world is real,” the Student warned. “Why not put it this way? Any statement that claims to be true makes a promise of sensory experience. It says: ‘If you do this, you’ll experience that.’ When an employer says, ‘I pay my day laborers twenty dollars a week,’ he really says, ‘If one of my day laborers opens his pay envelope at the end of the week’s work, he’ll find in it the amount of purchasing power that we call twenty dollars.’ If a grocer says, ‘Here’s a pound of sugar,’ he really means: ‘If you take this bag of stuff and put it on a reliable scale, it’ll

register a pound. If you open the bag and look in, you'll see something white, that sparkles in a good light. If you look at the stuff with a magnifying glass, you'll see cubical crystals. If you touch it with wet hands, you'll begin to feel sticky. If you put the stuff in your coffee, it'll make it taste sweet. If you put sulphuric acid on the stuff it'll turn black—"

"Bet the grocer never heard that sulphuric acid turns carbohydrates black!" Merchantson interrupted.

"Just the same, if he says, 'This is sugar,' he's making that promise, and if the stuff doesn't react that way, the grocer lied. And the same idea about truth applies to marriage. If a man says to a girl, 'I love you with every fiber of me,' that's true if it works out in how he treats her," continued the Student.

"And if the President of the United States says, 'The country is in a sound and basically prosperous condition,'" Merchantson interrupted, "that's true if business men get the promised results."

"Same thing in religion," the Student went on. "If a minister says to me, 'This universe is run by a loving Father in Heaven,' he's making a promise. He's really saying (even if he doesn't know it): 'If you pray and worship the right way when you get into trouble, there's a Great Spirit in the universe that'll send you peace and power. You needn't get panicky about things, for if you do your part, with faith and love, this All-Father will bring joy and beauty and triumph out of it all in the end.' And if it doesn't work, that minister is a liar, and all his religion is a lie."

"Truth as a promissory note or a road map fits your utilitarian purposes admirably," the Astronomer agreed. "But for the joy of apprehending orderliness in the universe, some of us feel the need for that truth which is inherent and universal consistency. And we too, in astronomy, rather pride ourselves on our power to predict."

"How do you find the kind of truth which is a reliable promise of specified experience?" the Thinker queried.

"You test it out," asserted Merchantson. "You make the experiment. You do the specified action, and see whether you get the specified experience."

"Test what?" the Student objected. "Before you can test

your proposition you have to work it out—you have to discover it. And you do that by observing how things work. You gather a lot of data.”

“And when you’re gathering your data, the less inner world and the more outer world you have, the better!” Workerson observed.

“How do you mean that?”

“Well, suppose the Astronomer here wants to predict eclipses. Does he shut his eyes, and relax, and try to remember how the stars looked last year and last month? He does not! He—but you tell us how you do it, Professor.”

“Astronomers use telescopes which are as accurate, mechanically, as they can obtain. They record their data in photographs, taken by precision methods. They measure distances and angles with minute accuracy. They have different observers repeat the same observations, and eliminate the personal equation by calculation of the probable error.”

“But it’s the same thing in the financial world,” burst forth Merchantson. “If an automobile manufacturer wants to know what is the best figure to price his next year’s standard sedan at, he doesn’t go off into a dark room and guess. He has his cost accountants gather figures from all the departments. He uses detailed records of past experience. It’s really a mathematical problem. And he takes mighty good care not to let the wishful thinking of some enthusiastic optimist, or the gloomy defeatism of some exhausted and discouraged pessimist swing the decision away from the objective facts.”

“Why, that’s true all along the line!” exclaimed the Student. “Outer-world records are always better sources of truth than inner-world memories or sensory-world impressions. Take it in a law court, when they’re trying an accident case. Suppose some witness testified the defendant was driving twenty miles an hour, way over on the right side of the road, and put out her hand to signal a right turn, when the plaintiff crashed into her. And suppose somebody happened to be taking a moving picture of that spot just when the accident happened, and the films are brought into court and they show the defendant speeding up the middle of the road, twenty times as fast as near-by pedestrians, and making a left turn without signalling.

Which would the court believe? Which would you rather trust as accurate and true—somebody's memory of a conversation, or a good dictaphone record of it?

"Why, science, with its microphotographs, its electric eyes, its amplifying sound recorders, its micrometer measuring devices, its statistical tabulating machines—and all the rest—science is building up a mechanized knowledge of the outer world that's incomparably more detailed and more trustworthy than subjective memory or direct observation with the eyes and ears and fingers of any one person. Your personal sensations and memories and subjective ideas are private possessions. You can't compare them with those of other people except by clumsy words. But the symbol-records of science can be verified, compared, analysed, systematized, treated by mathematics. Science preserves its records, it repeats its observations over and over, and checks and rechecks its results backwards and forwards, till you get accuracy of understanding and prediction that simply conquers the outer world!"

"Having rejected mysticism, rationalism and traditionalism, you now embrace empiricism," the Philosopher diagnosed. "You put your trust in sense experience rather than in intuition, reason or authority."

"It's more than that," protested the Student. "The senses are not dependable unless they have precision instruments to observe and record data. Even then, the data are not really trustworthy unless they have been verified by independent observers, and by experiments, and unless they are built into the great body of objective records, statistical tables, charts and all that."

"Perhaps you will accept the title of 'mechanistic empiricists,'" the Philosopher suggested.

"Perhaps they ought to accept the label of 'positivists,'" amended the Classicist.

"What's a positivist?" queried Workerson.

"Roughly speaking," the Classicist explained, "a positivist is one of these people who imply that nothing is real unless they or their group have measured it, and that nothing is true unless they have proved it in their laboratories."

"If rationalism was the intellectual mood of ancient Greece,

and if a mixture of traditionalism and rationalism dominated the Middle Ages, empiricism is the clue to the modern mind," contended the Psychologist.

"It wasn't invented yesterday," the Sociologist commented. "Sorokin's statistics give empiricism 19 percent of the influence over Greek and Roman thinking from 600 B. C. And he credits it with only 53 percent of the influence over modern thinking from 1900 to 1920 A. D."

"If you have a recent edition of the *Encyclopædia Britannica*, let us take a look at the article on 'Maps,'" suggested the Thinker. The volume was brought, and the Thinker pointed: "You will observe a map here which is based upon Ptolemy's work, about 150 A. D. This map became available in Europe a few decades before Columbus set out on his voyage to discover a short-cut to India. How does Ptolemy's map compare with a modern one of the Old World?"

"The Mediterranean looks correct," observed the Student. "There's the boot of Italy, kicking Sicily. There's Greece. There are the Dardanelles, the Bosphorus, and the Black Sea. There's the Red Sea, and Arabia. Northern Africa looks O.K., and there are the Straits of Gibraltar, and Spain, a little lopsided but with the same general outline she shows on maps today, as far as I can see."

"Anything wrong with the rest of the map?"

"I'll say there is!" Merchantson burst out. "Look at the south end of Africa—it's amputated, and what shows is all out of shape. Look at the British Isles—they're all warped. And Norway and Sweden—they're missing entirely—no, here are some islands, marked 'Insulae Scandiae.' That must be they. Look at India—she's shrunk to a wrinkle. And little Ceylon is swollen almost to a continent. Australia, Japan and the whole of the Western Hemisphere are missing."

"How do you account for part of Ptolemy's map being so nearly correct and the rest being so far wrong?" the Thinker probed.

"Geometry, for the ancients, consisted of earth-measurements," observed the Classicist. "They made a fairly accurate science of it in the regions where their civilization was most highly developed. The Roman road builders made surveys.

Astronomers recorded observations. Navigators kept records, and made better and better charts. That map of Ptolemy's, when it turned up in the time of Columbus, was one bit of the winnowed wisdom of mankind."

"That just proves my point!" the Student exclaimed. "That part around the Mediterranean was based on measurements."

"But how does it happen that Ptolemy's map was partly right in the region where the Roman surveyors had never gone?" the Thinker asked. "India, Ceylon, Persia and the Caspian Sea are out of shape but they are there. The presence of the 'Insulae Scandiae' indicates that Ptolemy had some inkling of the existence of Sweden. What is the explanation of this half-knowledge?"

"Must have been some travellers," suggested the Student. "I'll bet they kept a diary that read something like this: 'So many days' journey out of Jerusalem, we came to the Land of the Two Rivers, and to the great city of Babylon, and so many days' journey thereafter we came to Susa, and then to Persepolis. A month's journey after we had left behind the land between the two rivers, we came to the Ganges, in the land called India.' And I'll bet Ptolemy just put together all the travellers' diaries he could find, and drew the outskirts of his map to fit them the best he could, kind of by guesswork."

"Notice the lines of latitude and longitude on the map," the Thinker pointed out. "Why do the meridians come closer together toward the north?"

"That's to take account of the curvature of the earth," Workerson announced.

"Then Ptolemy, back in 150 A. D., knew that the earth was spherical?" queried the Thinker.

"How could he?" Merchantson protested. "Nobody had ever sailed around it."

"Some of the ancient Greek astronomers had noticed that the shadow of the earth on the moon in an eclipse is always circular. They observed also that when a ship goes over the horizon, her hull disappears before her masts go out of sight. Also, some careful observers of the stars noticed that certain constellations which could be seen from Egypt were not

visible in Greece, and certain ones visible in Greece were not visible in Egypt. Some ancient philosophers put these facts together, and deduced the theory that the earth is a sphere, not a disc."

"Then the correct features of Ptolemy's map were based partly on accurate measurements, partly on guesswork from the stories of travellers, and partly on theories of philosophers to account for puzzling observations," the Student concluded.

The Thinker mused: "I wonder—when Columbus was considering his epochal voyage—was there a group of skeptical young positivists who said to him, 'Look here, Columbus. Nothing is real unless it's been measured by scientists. Nothing is true unless it's been proved by science. This idea that the earth is round is a mere philosophical speculation. All that talk about India is just hearsay, and undoubtedly is based on mistaken interpretations of journeys to Persia. We positivists have every confidence that the well-measured parts of the world will ultimately prove to be the only ones that exist—or at any rate the only really important regions. These negations, if not quite beyond dispute, are yet so nearly certain that no system of thought which rejects them can hope to stand. We advise you, and all other wild-eyed and hare-brained navigators, to keep your little ships inside the Mediterranean, where the findings of geography are well established.'"

"If he and the other explorers had done that," remarked Workerson, "what we call the United States might still be just a wilderness hunting-ground for Indians."

"But what did happen?" the Thinker prompted.

"Columbus, and Magellan, and those other rash chaps acted as if the speculation about a spherical world was true," the Student recounted. "They took the maps as they were, and sailed out to test them."

"Here, this shows what happened," Workerson discovered, pointing. "This map was drawn by Mercator in 1569. It shows how the world cleared up because those explorers were game. Look: Africa, India, China, Japan, Norway and Sweden had come almost into correct shape. You can even recognize the east coast of the Americas."

"But Columbus would have been a fool if he'd thrown away the results of all those careful measurements," Merchantson insisted.

"Say, why does it have to be either-or?" the Student urged. "Why can't it be both-and? Doesn't your map of truth grow fastest if you make use of all the resources you can get hold of? Why can't you take the accurate results from scientific measurements, and figure out by logic and critical discussion what they mean, and what theories you can fit to them? Then why not add any promising leads you can get from the wisdom of the past and from common sense or half-verified observation? And then, with all you can collect in those ways, why not go off into the inner world, and use your creative capacity, so that some new and more adequate hypothesis emerges? And then why not test out that new hypothesis by experiment, courageously and ruthlessly, using every check you can get hold of, so as to avoid and eliminate bias? I'll bet if we used that kind of method, clear up to the hilt, we'd begin to open up truth with a speed and power the world has never seen!"

Who and What Am I?

"ALL THIS WHILE we've been dodging the very crux of the problem," said the Student to the Thinker. "We've built up our whole discussion on the proposition, 'I am conscious.' But who am I? We agree that other humans have selves like our own. But how does it happen that out of the two billion or so people in the world, there's only one I call 'I,' and all the rest are 'you' or 'they'? It's the most fundamental fact in my consciousness. I know myself from the inside, and everybody else (if I know him at all) from the outside. But how do you account for it? What is this 'I' at the heart of my existence?"

"Suppose your mother had married someone else instead of your father," the Thinker pursued the question. "Would this self you call 'I' have come to consciousness within some child born to your mother? Or within some child of your present father? Or part one and part the other? Or would you never have been born at all? Or born in some wholly different family?"

"It is purely a matter of degree," announced the Psychologist. "If one grandparent had been different, your consciousness would, to that degree, have differed from what it is now. Just as what you call 'I' would have been different from what it is now if you had spent half of your life in Holland, or in Tibet."

"I'm not so sure about that," the Student resisted. "There's a pair of identical twins in the party. One of them is right here now. They've never been away from each other for more than a day at a time in their whole lives. They've eaten the same food, had the same education, and shared the same friends. How about it, Twin? Is your consciousness practically identical with your brother's?"

"We're a lot alike, of course," the Twin answered. "We like to share everything with each other. We often know ahead

of time what the other will say or do. But when he's out of the room, like now, he's just as much away from me as anybody else is who's out of the room. We're two completely distinct people, at the core. He's one focus of consciousness, and I'm another, if you want to put it that way."

"Naturally," commented the Psychologist. "Each twin has his own brain. Each sees objects from a different angle. Each has his own sensations of touch, taste, and muscular movement."

"A while ago we were splitting up our experience-patterns—first into the body and its surroundings; then into our intentional actions and our coerced actions; then into our inner world and our sensory world," remarked the Thinker. "But there was one fundamental classification which we neglected to make. Some of the experience-patterns that come to me I find myself calling 'mine'—my body, my clothing, my books, my money, my parents, my wife, my friends, my club, my country, my beliefs, my interests, my purposes. But most of the patterns which I experience do not seem to be mine in that sense."

"Isn't it just a matter of degree?" challenged the Philosopher. "All the patterns which are part of your experience are more or less yours."

"But to me my body is totally different from your body," broke in the Student. "I can do things with my property which I can't do with yours."

"Still a matter of degree," insisted the Philosopher. "You claim, as yours, the patterns with which you can function. Functioning is a matter of degree. An automobile is yours to the degree that you are free to drive it, lend it, alter it and dispose of it. Ideas are yours to the degree that you have mastery over them."

"How about my enemies, my pet aversions, my cell in the jail, my deadly disease?"

"They're yours to the extent that you function with them. Hating your enemies, and fighting against them, are forms of functioning. You may not be free to leave your prison cell, and to that extent it is not yours. Your deadly disease functions in your body and the functioning of your body has to be ad-

justed to the activities of the disease. Mineness is a matter of functional relation."

"That's the expanded personality you're talking about," observed the Sociologist.

"Define 'expanded personality,'" demanded the Philosopher.

"Roughly, it includes everything you call 'mine,'" the Sociologist explained. "It includes the whole network of functionally related structures organized around the body which it uses as its base. One's expanded personality consists of one's body, plus the objects, people, social organizations, ideas, purposes, memories, and other structures connected with one's body by one's attachments and aversions."

"Let me raise a fundamental question there," the Thinker put in. "Is your expanded personality your real self?"

"Well, why not?" asked Merchantson.

"Take an imaginary case," the Thinker suggested. "Suppose a grocery clerk has grown up in a small town. He's deeply attached to his mother. He has sung in the church choir and been president of the Christian Endeavor Society. A war breaks out. He is drafted into the army. At the mobilization camp, he gets into a uniform, and his civilian clothes are packed away. Instead of selling groceries, he is being drilled to be a machine gunner in a tank. All his new comrades are people he has never known before. They teach him to play poker and to get drunk. His fundamental purposes and attitudes become radically different from those he had in the home town. Even his attitude toward his mother is deeply changed. Is he still the same person?"

"His expanded personality has changed," remarked the Sociologist. "Start with his body: the new drills have taken off fat, built up various muscles, and developed new nerve and brain areas, so that his physical substance has been modified profoundly. Instead of his Sunday suit, his store apron, his delivery baskets, his order book, and the like, he has his olive-drab shirt, his puttees, his place in the tank, his automatic rifle, and such. A radically new set of personal associates has been substituted for the old. His regiment and the tank corps have taken the place of his family, his chain store and his

church. Instead of the ideas and attitudes revolving around business and religion, he has a new set, focused around the military activities, and around the dissipations, of a soldier. He has practically a new expanded personality."

"Just the same, he still writes letters to his mother," Merchantson objected. "He still remembers the home town, and maybe the girl he used to walk home with from choir practice. It's just the externals that are really changed."

"This grocery clerk of yours," the Student asked, "—would he be any different in his soldier personality from the Brooklyn bartender who is his pal in the tank?"

"What would you say of the great and versatile actor?" asked the feminine voice. "In one play, he has the huge nose of Cyrano; in another the wrinkled face of the old Jew Shylock; in another he is a brave young hero. He throws himself with abandon into each of his parts. He even, for the time being, loses consciousness that he is really the actor. But his own individuality runs like a golden chain through all the various beads called personality-parts that he has taken on."

"Do you remember that study of nine hundred of my own dreams I've been making?" the Theosophist reminded them. "Well, in nine of those I found myself shifting from one personality to another during the dream action. For example, in one dream, I was walking along a street when a woman accosted me. Thereupon I ceased being the man accosted, and became a man on the other side of the street, watching the one to whom the woman was talking."

The Psychological Researcher had supporting cases to cite: "Mrs. Arnold-Forster also told of dreams in which the dreamer passed from one personality to another," he remarked. "Frederick Pierce, on the basis of a study of a thousand dream records, wrote: 'Of the capacity of the dreamer to identify with several, or all, of the characters in a dream, we have a number of good examples.'"

"Almost everybody goes through a lot of personality changes in real life," observed the Student. "When a fellow goes on a camping trip, he really puts on a different expanded personality from when he's working in a bank. When a person gets married, or changes his job, or travels in a foreign country, he's

really taking a different personality—or at least large chunks of a different personality. And all the while, there's this central core, that calls itself 'I'—the essential identity, if you want to call it that—that goes on observing life through all these different selves."

"Children put on play personalities easily enough," the feminine voice remarked. "They can be an Indian, or a pirate, or a fireman so vividly they almost think it's real. I wonder, though. Don't we all do that, when we read an enthralling book, and actually forget ourselves and enter into the personality of the heroine or the hero? I wonder if a lot of our reading and playgoing isn't just looking out into life through the windows of a series of other personalities—real or fictional. And a good deal of the life of a real mother is vicarious experience through the adventures of her children."

"The Latin word *persona* means 'mask for an actor,'" observed the Classicist.

"But look!" the Student pointed out. "When we were talking about the powers of the inner world, the Thinker told us that beyond images, and beyond verbal abstractions, there is a level of swift, flashing intuition. Then, when we were discussing how we can find truth, we agreed that truth is a property of the pure ideas that lie back of and beyond words. Now here, when we're trying to find out what is the real self, we discover that the personality is just a kind of mask, that belongs on the levels of the outer world, the sensory world, the world of inner images and the world of verbal generalizations. The real self is the core of consciousness that lies behind the mask—it's the flame in the lantern. It belongs to the world of intuition, and pure ideas—and maybe what you might call 'spirit'."

"Perhaps that would be a good way to define the word 'spirit,'" the Thinker suggested. "Can we agree to include in our conception of the spirit that core of identity which moves as an inner observer through all the adventures of our lives, and which accumulates wisdom from the various personality masks which we wear?"

"What you're calling 'spirit' is what I mean by 'personality,'" the Unitarian minister protested. "A personality, as I

understand it, is what is capable of thinking, willing and loving. When I say that I believe in a personal God, I don't mean a physical body, having prejudices, with a local viewpoint, and the rest of your personality mask. I mean a universal Being who thinks, wills, and loves."

"The question is purely one of definition, is it not?" the Thinker replied. "The point on which we seem to be agreeing is that our selves have two aspects. First is a body-centered mask, a network of property, friends, ideas, memories, purposes and the like, which one recognizes as 'mine,' and which we have been calling the expanded personality. Second is the focus of consciousness, the observer at the core of your individuality, which we have called 'spirit'. Omit the terms 'personality' and 'spirit' entirely, if you like, and use, instead of the terms 'body-centered network,' and 'focus of consciousness'."

"If you intend to argue that this 'spirit,' or 'core of consciousness,' is a permanent unit, what will you do with the fact of multiple personalities?" the Psychologist challenged.

"What do you mean, 'multiple personalities'?" Workerson asked.

"To illustrate, there is the famous case of Miss Beauchamp, investigated by Dr. Morton Prince," related the Psychologist. "Miss Beauchamp was dignified and reserved. Hypnotic treatment brought on a state in which she became gay and mischievous. In that state she claimed to be a new personality, calling herself 'Sally'. She could remember the experiences of the shy girl. But when she slipped back into her original personality, she could remember nothing that her wilder self had done. She developed a third sub-personality before the doctor finally succeeded in putting her back together again."

"The case of 'Doris,' investigated by Dr. Walter Franklin Prince, was a good deal like that," added the Psychical Researcher.

"Basically," the Psychologist went on, "multiple personality is not so far removed from amnesia."

"What's amnesia?" Workerson queried.

"That's a lapse of memory, stupid!" Merchantson informed him.

"Rather more than merely that," the Psychologist elaborated. "It often involves forgetting who one is for long periods of time."

"What's the cause of such cases?" Merchantson asked.

"In instances of multiple personality, part of the emotional life, which has been 'suppressed,' or pushed out of the conscious mind, bursts forth as a semi-independent personality. Somewhat similarly, but for a larger period of time, in amnesia the 'normal' consciousness becomes so intolerable that it is walled off behind a barrier of forgetfulness; a substitute personality emerges out of the subconsciousness and takes charge."

"But what's all that got to do with the core of identity that lies behind the personalities?" the Student asked.

"If your consciousness can be split up into separated fragments in this way, what becomes of the supposed unity of the 'spirit'?" the Psychologist retorted.

"How many times in a month are you aware of dreaming?" the Thinker asked.

"Oh, once or twice—not more than half a dozen times anyway," the Student returned. "Why?"

"You probably dream every night, most of the night if not all night long," remarked the Psychologist.

"There's a way to test that if you doubt it," the Theosophist suggested. "Just before you go to sleep, relax completely. When you find your body sinking into delicious passivity, say over inwardly, 'The first thing I shall do when I wake will be to remember what I was thinking or dreaming of just before waking.' When you wake, pick up whatever threads of dream consciousness hang over from your sleep. If you're at all like me, you'll find that every night you go through a series of inner-world adventures—usually absurd and chaotic, but quite often containing experiences not otherwise accessible to your consciousness."

"But if that's true, I really have a multiple personality myself," protested the Student. "If this core of consciousness which I call 'I' is having adventures every night, of which my waking mind is in ignorance, then it's like having two selves—or a whole bunch of different selves."

"Do you ever, while dreaming, become fully aware that you are in a dream, and still find yourself able to go on with the dream adventure?" the Thinker asked.

"F. W. H. Myers tried to do that on nearly three thousand different nights, and succeeded only three times," the Psychical Researcher related. "Once he thought he was standing in his study. The furniture seemed blurred, and it struck him that this must be because he was dreaming. He was delighted to have this opportunity for experimentation. He made a strong effort to keep calm, so as not to wake up. Wanting very much to see other people and speak to them in his dream, so as to see whether they were like real persons, he cautiously walked downstairs, hoping to meet a servant. But what he met was a stranger, and that startled him so that he woke up."

"Why, that's like Du Maurier's 'Peter Ibbetson'!" the feminine voice exclaimed.

"And like Kipling's 'Brushwood Boy,'" Merchantson added.

"Let's get back to the problem of the real self," urged the Student. "Where do we stand?"

"All right," the Thinker responded. "Where do we stand?"

"Well," ventured the Student, "it seems to me we can all agree that what we've been calling the expanded personality—the body and its network of the things, people and ideas it calls 'mine'—is a kind of mask through which the real self looks out, or a lantern through which it shines out, or a sort of vehicle in which it moves about in the world and gets experience. And this real self, it seems, can put itself into a wide variety of these masks or vehicles, by imagination, sympathy, or dreaming, or by marriage or great changes of fortune. And I suppose that as this inner self or spirit becomes more and more fully conscious, it might begin to realize that the personality is just a garment, or a part in the play, and might begin to see the whole drama with a clarity and a meaning that are keen and glorious."

"But how do you know that this conception of your self, or 'spirit' as you call it, is true?" the Philosopher objected. "Hume proved, by inexorable logic, that what we call the 'self' is simply a collection of mental facts. There is no self, over and

above the experiences and ideas, for the experiences and ideas to belong to."

"How do I know that it's true?" the Thinker repeated. "Why not apply the test we worked out a while back? When I say 'The real self collects experience through a wide variety of personality-vehicles,' just what does that promise in terms of experience? To me, it makes this promise: 'This sense of personal identity, which is the very core of the fact on which we are basing our whole exploration, will go on through a long series of adventures. The mask through which I look out will change. The atoms in my body may all be replaced by new atoms. My mind may become equipped with new stores of information. My attitudes may be transformed. But at the core of it all there will still be that which says 'I' in the same sense in which I say it now. That 'I' will claim as its own the whole long chain of memories which these adventures have built. That 'I' will go on reaping the harvest of experience, with ever widening comprehension of the unfathomable mystery which is life.'"

We Die—Then What?

"SOUNDS GOOD TO me!" agreed the Student, captured by the Thinker's summary of the self.

"Very eloquent!" conceded Workerson. "But aren't you forgetting something? Not so long ago you were quoting your patron saint, Bertrand Russell, how he said: 'No fire, no heroism, no intensity of thought and feeling, can preserve an individual beyond the grave.' I don't see that you've any good reason to go back on that. One of these days that body of yours will connect with some peppy streptococcus, or with some drunken driver's Rolls Royce, and then where's your inner self going to go with its harvest of experience?"

"I'd forgotten about that," the Student admitted. "It does seem kind of silly, going through all this, and accumulating the contents of a self if it's all going to go out, pfouf, one of these days. Why not just take your fling, and then, when the game is played out, turn on the gas?"

"Or jump into a volcano," Workerson amended.

"Why not play the game with nerve and grit while you play it, and stop fretting about what you can't find out anyhow?" Merchantson protested.

"I want to know," burst out the Student. "Here's one of the biggest enigmas in the whole world. Here we go walking along through life, with people dropping into coffins all around us, and you stick your head in the sand and pretend it doesn't matter, when your own coffin may be the next one in the row—or maybe the coffin of the person you love dearest on earth. If the body was the main thing, with consciousness just a kind of smoke rising from it, then the answer'd be easy. But all this discussion has made me change that idea. I'm beginning to feel sure my body is like an airplane I'm taking a ride in.

What I want to know is, do I bail out when the plane cracks up?"

"Do you believe in apparitions?" asked the Thinker.

"You mean ghosts?" grinned Workerson.

"Hallucinations," the Psychologist corrected.

"Leaving aside the exact term to apply," the Thinker pursued, "does it ever happen that a person thinks he sees another person close to him whose physical body is really far away—sees him vividly and in full detail, perhaps hears him speak or feels his touch—and then sees him disappear in an instant, into thin air, when there's no place for him to hide?"

"Plenty of people out at the asylum think they see spirits that aren't there," Workerson conceded.

"Sane people see apparitions too," observed the Psychical Researcher. "The Society for Psychical Research has records of hundreds of cases."

"Some people," the Psychologist explained, "have a tendency to project into the outer world some of the fabrications of their inner worlds. Their dream-images become visions, seen as if outside themselves. Sometimes these projected images are perceived as if located in a crystal ball, sometimes as if pictured on a blank wall, and sometimes as if the image were an apparition moving about in the outer world."

"Here's a simple experiment we might try," the Thinker suggested.

"Going to raise a spook?" Workerson asked.

"No, this is just for illustrative purposes. Please close your eyes, relax, and imagine yourselves as clearly and definitely as possible back in your own homes of today, in the presence of someone there who loves you." After two or three minutes of silence, he went on: "Now if you will open your eyes, I should like to ask you a few questions. Suppose that Dr. Rhine is right—that the experiments which he has performed at Duke, and those which have verified his results at other universities, are correct. Suppose, therefore, that a great many people actually have the power of telepathy and clairvoyance which he seems to have demonstrated. Specifically, let us suppose that the persons at home, of whom you were just thinking, had possessed the power of telepathy, vividly, and had been

thinking of you at the time we were carrying on this experiment."

"They might have seen apparitions of us at the places we were thinking of!" exclaimed the Student.

"That is assuming that they had also this faculty of projecting their inner-world images into the outer world," insisted the psychologist.

"A good many cases of that type have been recorded," remarked the Psychological Researcher, "—apparitions of people who were far from home, seen in their homes when they were thinking of home."

"Carry it a bit further," the Thinker suggested. "Suppose that you had been gifted with clairvoyance, and had been able to bring that power into action at the moment when you were thinking of home, and when your telepathic loved one 'saw' you."

"Wouldn't we then have been conscious of being there—in our apparitional bodies, as it were?" the Student asked.

"Several cases of that type are on record," the Psychological Researcher attested.

"Oh, come on!" Workerson protested. "Give us the cases."

"There are too many to tell without boring you. But here's one: When the Rev. P. H. Newnham was a student at Oxford he had a vivid dream that he was stopping with the family of the lady who later became his wife. When she left the room to go to bed, he excused himself (in his dream) and rushed after her up the stairs. He overtook her on the top step and passed his arms around her waist, under her arms, from behind. He then woke up, and almost immediately a clock struck ten. Next morning he wrote a detailed account of this to the young lady. Crossing his letter came one from her, telling that about ten o'clock of the night when the dream occurred, on reaching the landing of the stairs, she heard his footsteps quickly mounting after her, and then felt him put his arms around her from behind."

"That's not an apparition, that's a hug-her-ishion," objected Merchantson.

"Try this one then," retorted the Researcher. "A well-known physician of New York City reported it in writing to Mr. J. K.

Funk, prominent publisher. The physician was on a river steamer in Florida. During the night he felt himself walking in the air, with intense sensations of exhilaration and clarity of mental vision. In that state, he thought of a friend who was more than a thousand miles away. Within a minute, he was conscious of standing in the room where his friend was. The friend said to him, 'What in the world are you doing here? I thought you were in Florida,' and started to come toward him. The latter heard the words distinctly but was unable to answer. He then had an ecstatic experience of a life beyond the consciousness of time or space. But he decided to return to earth. He saw his body, propped up on the bed as he had left it, but retained consciousness of another body to which matter offered no resistance. Then he reentered his normal body. Next day he wrote a letter to the distant friend. A letter from the friend crossed his in the mail, stating that he had been distinctly conscious of his presence and had uttered the exclamation which the appearer heard."

"Where can I find those cases?" demanded the Psychologist.

"You'll find a number of such cases in an article called 'Visions and Apparitions Collectively and Reciprocally Perceived,' in the 'Proceedings of the Society for Psychical Research' (London) for May, 1933."

"Those might be just hoaxes," Workerson objected. "Or maybe the people who told them believed them, but the story has grown with age."

"In both these cases," retorted the Researcher, "you'll note that letters telling of the experiences were exchanged immediately afterwards."

"That is curiously like a dream which has recurred to me again and again," the Philosopher observed. "I find myself up near the ceiling, looking down at my body in bed. I see myself lying there asleep—sometimes apparently dead. And then I manage to get back into my body and wake up."

The Psychical Researcher pricked up his ears. "There is a Caroline Larsen in Middlebury, Vermont," he said. "Her husband Alfred is a musician listed in 'Who's Who in America.' She has written a book telling how she repeatedly had that experience of standing outside her body, and the strange

excursions she made while out. A man in Wisconsin named Sylvan Muldoon has written two books, telling how he has been 'projected' out of his physical body hundreds of times. J. S. M. Ward, author of several articles in the *Encyclopædia Britannica*, has also written two books telling of similar experiences of his own."

"In any case," the Thinker suggested, "we may come back to our little experiment. If telepathy and clairvoyance are real, we ought to expect that experiences would happen, like those which the Researcher has related."

"But how does all this bear on whether the spirit survives death?" inquired the Student.

"What do you deduce from what has been said thus far?" the Thinker quizzed.

"Well, there seems to be a fairly good case for the hypothesis that the inner consciousness of people who are properly clairvoyant can leave the body while the body is still alive, can observe what's going on at a distance, and can be observed there by people who are properly telepathic."

"Aren't you dragging back the old, exploded superstition of the soul?" demanded the Psychologist.

"Just when did psychology prove scientifically that the soul cannot exist?" the Philosopher inquired.

"I'm interested in facts a lot more than in words," the Student protested. "You don't change the facts by calling names like 'exploded superstition.' Seems to me there's a good case for the hypothesis that consciousness can leave the body—or can perceive events from a distant viewpoint, which is the same thing, isn't it? What I want to know is, what happens if the body is destroyed, and the inner consciousness has no base from which to operate?"

"Do you believe that apparitions of people known to be dead are ever seen by sane people?" the Thinker asked.

"Judging by the ghost stories that go around—I mean the serious ones—it's apparitions of the dead rather than the living that people usually think they see," the Student responded.

"Suppose, then, that you saw an apparition of a person whom you knew to be dead. How could you tell whether it

represented an independent consciousness, or was a mere delusion?"

"Easy enough," said Workerson. "Common sense tells you that such things can't happen. You can be sure it's just your imagination."

"So you haven't yet gotten over accepting common sense uncritically!" the Philosopher noted.

"If any other person were with me—I mean any person with a regular body—I'd ask him: 'Do you see what I see?'" the Student responded to the Thinker.

"Let me give you an example on that," broke in the Researcher. "Take the case of Samuel Bull, an old man who died in June, 1931, in Ramsbury, England. Early the next year, nine members of his family at one time saw what appeared to be his living presence, dressed as he had been in the evenings during his lifetime, and with clearly recognizable features. The apparition was seen repeatedly. Every time he came, all the persons present could see him. Twice the apparition laid his hand on the brow of his widow, and once she heard him call her name. The case was searchingly investigated by experienced students of psychic matters."

"That was probably a materialization," remarked the Theosophist.

"Materialization!" snorted Workerson. "That bunk! After all the times mediums have been exposed dressing themselves up in cheese-cloth to impersonate spirits!"

"Ever hear of Sir William Crookes, inventor of the Crookes tube, from which all x-ray and radio tubes are direct descendants?" the Researcher challenged. "Well, Crookes investigated a genuine materialization medium. She went into trances in his own laboratory, under his own conditions. He proved that the medium and the materialized spirit were two different bodies. He saw them both at the same time—held a light close to the face of each."

"You must have heard of Margery Crandon," spoke up the feminine voice. "She has produced simply wonderful materializations. She materialized her brother Walter's hand so that he left hundreds of thumb prints in dental wax. And it was the same print Walter had made on a razor before he died."

"That's a good example of spirit materializations!" gloated the Psychologist. "Expert investigation proved beyond question that those so-called 'Walter' thumb prints were identical with the thumb print of the dentist who first showed Margery how to use the wax. Six different commissions, with twenty-three distinguished members, have investigated the case. Each in turn decided adversely the claims of Margery's defenders. Out of these twenty-three members, only one expressed the opinion that the phenomena were genuine. Fourteen said that they had observed unmistakable fraud."

"Margery, I think, has done more damage to psychical research than ten genuine, trustworthy mediums could repair," conceded the Researcher. "Every careful student admits the immense amount of fraud which unscrupulous mediums perpetrate. Take for example 'spirit photographs' and 'direct writing' by spirits on slates. Psychical researchers have exposed an immense number of fraudulent methods by which these alleged phenomena can be and have been faked. But does counterfeit money disprove the existence of real money? No one is in a position to form an intelligent opinion on the question of materializations until he has studied the work of Gustave Geley and other competent and critical investigators."

"You ought to recognize that many intelligent people who have had sittings with Margery are convinced she's genuine," insisted the feminine voice.

"Why not leave the question of materializations to one side, since people fight about it so," suggested the Student. "For the sake of the argument, let's concede the possibility that an apparition of a person known to be dead might be seen by as many as nine people at the same time. Does that prove that personalities—or spirits—survive the death of their bodies? Couldn't the whole crowd of people who thought they saw the apparition be kind of hypnotized, or maybe getting telepathy from one person who had a delusion?"

"Well, here's a study that bears on that question," the Researcher responded. "We were talking a while ago about conscious apparitions of the living. We know that those apparitions were not mere subjective hallucinations by those who saw them, for the apparitions remembered their experiences

when they got back into their normal bodies. We have at least sixteen cases of that kind. We also have twenty-two cases of apparitions of people known to be dead, perceived by two or more people at the same time. Are these apparitions of the dead the same kind of phenomenon, or something different? If they are the same, then the apparitions of the dead may be supposed to be conscious too. What do we find? Both kinds of apparitions were likely to be seen by wives, husbands, lovers, children, parents, or close friends rather than by strangers. Both kinds were likely to appear at a time of crisis. Both kinds made intelligent adjustments to physical objects and to people. Both kinds are reported, at times, to have spoken to and to have touched those who perceived them. Both kinds, at times, are reported to have passed through physical objects and to have disappeared suddenly. Such facts make it seem reasonable to suppose that the apparitions of persons known to be dead are actual psychic embodiments of the consciousnesses of those people—that they have really survived death."

"But if that is all true," the Unitarian broke in, "then the appearances of Jesus after his death may really have happened!"

"And the obsessing of people by demons might be true too, and black magic might be real," added the Psychologist sarcastically.

"Say," put in the Student, "if there are all these cases of apparitions and such stuff, why hasn't anybody made a systematic study of the whole problem?"

"A good many people have," retorted the Researcher. "Have you ever seen 'Human Personality and Its Survival of Bodily Death,' by F. W. H. Myers? It's the great classic in this field."

"Yes, Myers was quite a famous psychical researcher," conceded the Psychologist, with a gleam in his eye. "He investigated a case in which the famous medium, Stainton Moses, claimed to give information to a group of people on February 10, 1874, directly from some spirits who had recently died in India. Myers, after a long investigation, cited this case as striking evidence of Moses' powers. But later it was discovered that all the information claimed by Moses to have been given by these spirits had appeared on the front page of the *London Times* on February 4, 1874—six days before the séance."

"Everybody makes slips," protested the Researcher. "Name me one great inventor or discoverer who never blundered! But if you're fair, you'll admit that Myers was the first man really to develop the theory of the subconscious mind, which plays so large a part in modern dynamic psychology."

"That may be true," admitted the Psychologist. "I should be just as keen as anyone to get real evidence on the question of survival. But if these apparitions and these communicators through mediums are really surviving spirits, why do they never give any real evidence of their identity?"

"They do," retorted the Researcher. "Volumes of psychical research proceedings are full of such evidence."

"Even if that evidence were valid," objected the Psychologist, "if we grant telepathy, that would explain it all."

"Rather a remarkable kind of telepathy for the medium to pick up from the whole world just the items of information that fit a particular sitter and the spirit supposed to be communicating with him!" retorted the Researcher. "But take the case of 'George Pelham,' a young man who died in 1892. During the next six years, his spirit purported to communicate through the famous medium, Mrs. Piper, whom Professor William James of Harvard investigated. Mrs. Piper never knew Pelham in real life. But, out of at least a hundred and fifty sitters who were present when 'Pelham' communicated, the spirit claiming to be Pelham recognized thirty whom Pelham had known when living, and never claimed acquaintance with one whom Pelham had not known."

"Strange that these surviving spirits never communicate anything worth while!" protested the Psychologist. "They say: 'It is wonderful to see you. We are happy. We are doing all we can to help you.' Why do they confine themselves to such banalities?"

"Right!" agreed the Biologist. "Here are all the hosts of heaven, supposedly, able to write through an automatic hand, or to speak with a 'direct voice,' and they produce nothing but rubbish. In all these centuries, why have we never had a single plausible account of the life after death?"

"Have you ever read 'Gone West,' by J. S. M. Ward? Or 'My Travels In The Spirit World,' by Caroline Larsen? Or

‘The Astral World,’ by C. W. Leadbeater?” asked the Theosophist.

“I never heard of any of them,” the Biologist admitted.

“Neither have I,” added the Psychologist.

“Those are merely the beginning of a long list,” the Theosophist affirmed. “If you want systematic descriptions of the after-life, you’ll find plenty to ponder over in such books.”

“This Leadbeater,” queried the Psychical Researcher “—wasn’t there a lot of scandal about him?”

“Just libels, started by jealous people,” replied the Theosophist.

“Well, wasn’t he a close disciple of Madame Blavatsky, whom the Society for Psychical Research exposed as ‘one of the most accomplished, ingenious, and interesting impostors in history?’”

“That was a grossly biased and one-sided report, quite unworthy of the S.P.R.!” asserted the Theosophist with heat.

“Seems to be a lot of scandal mixed up with Spiritualism and Theosophy,” remarked the Student. “Just the same, if there are all these accounts of the life after death, I’d like to hear what they say. What happens when we pop off, or kick the bucket, or whatever it is that the spirits call it?”

“There’s pretty general agreement on many of the basic points,” the Theosophist launched forth. “Death consists in the permanent separation of the apparitional body from the physical body. By a natural process of attraction and repulsion, spirits tend to find themselves in more or less close association with other spirits like themselves, and in the kind of a world produced by the memories, thoughts, passions and aspirations of that kind of spirit. For example, gangsters, militarists, sadistic fascists, and other people addicted to cruelty tend to gravitate into one region of the after-life. Everyone there is trying to inflict coercion and cruelty on others and to escape having it inflicted on himself.”

“That would be hell!” commented the Student.

“Exactly,” the Theosophist replied. “Then take the people whose main interests on earth focused around sex. They gravitate into an erotic region, where everyone is seeking salacious excitement, and the scenery and activities are developed by

that kind of thinking and feeling. Again, take the people who have lived decent suburban lives, devoted to their children, their gardens, and the friendly life of a democratic community. They find themselves associated with that kind of spirit, in close communion with their loved ones, in surroundings of beauty, peace and friendliness, freed from the interference of antisocial elements. Or, take the kind of person who has been ardently devoted to the service of humanity. He finds himself in fellowship with others like himself, given new resources and powers, and aided by higher beings in carrying forward the work which he loves."

"Where's heaven?" Merchantson asked.

"Heaven is any region in which all the inhabitants serve the universal welfare joyously, because they want to. It is any region where complete love and utter freedom prevail. Fellowship, participation in beauty, creativity, and communion with Spiritual Reality characterize such spheres in the after-life."

"You talk as if there were many heavens," Merchantson remarked.

"So there are," responded the Theosophist, "—an unlimited number. There are as many heavens as there are possible groupings of the people who are ready to live completely lovingly, and in complete creative harmony with the universe of which they are a part."

"Are there cities, factories, and mines in the life after death?" Workerson inquired.

"Certainly," responded the Theosophist.

"That sounds decidedly materialistic," objected the Unitarian. "What is the use of a future life if it is merely a continuation of the same sort of thing we find on earth?"

"Only the material-minded find the future life predominantly materialistic," responded the Theosophist. "Those who have learned to live the spiritual life have the power after death to go on into regions beyond images and beyond words."

"If there are cities in the after-life, where are they?" demanded Workerson. "Up in the sky? Down under the ground?"

Here the Psychical Researcher broke in: "A New York lawyer, named Henry Armitt Brown, dreamed that he was being murdered in an alley. In the dream, two of his friends

rushed into the alley to rescue him, but got there too late. He subsequently found that, on that same night, each of these friends had dreamed his part in this very same drama."

"That's just telepathy," said Merchantson.

"All right," conceded the Researcher. "But where was the dream? Inside of Brown's skull? Or in his friend's skull? Or in some New York alley?"

"The world of inner images adds a fourth dimension, leaving infinite space for three-dimensional structures within it," the Theosophist asserted. "The after-life is in that infinitely greater world."

"But that makes it all unreal," protested Workerson. "Your future life is just imagination."

"What is your test of reality?" the Theosophist asked. "My test is this: how far can this experience be shared? And how far can this experience be woven into functional relations with the rest of the network of reality?"

"Then telepathy is the clue to the whole thing," guessed the Student. "Telepathy means the power to share experiences in the inner world. And when people die, they suddenly become completely telepathic."

"Don't be too sure about that," cautioned the Theosophist. "A great many people are reported to be terribly isolated and shut off in the future life. Many are surrounded by their own delusions, and are almost wholly out of contact with other spirits. And of course, many spirits are limited, for long periods after their death, to very low levels in the future life, because they have never acquired the power to go into higher regions."

"How do you get the power to go into higher regions?" asked the Student.

"The factors that determine how high one can go may be put into three groups: ethical, cultural and psychic," the Theosophist explained. "The ethical is fundamental. Only those who have learned to cooperate and to work joyously for the common good, just because they love to, can possibly enter into the higher regions. Those who are self-seeking, domineering and cruel automatically confine themselves to regions of suffering. The cultural is of vital importance too. The future life is fundamentally a mental existence, and the more one has learned

to live in the world of the mind, the more regions are open to one's exploration after death. But besides cooperativeness and a richly stocked mind, it is highly important to develop psychic power. Even in the lower regions, those who have strong wills, and who are versed in the occult, are able to dominate over those who are weak and uninitiated. Hypnotism, for example, becomes a terrific power for evil in a world where thoughts are objectively real things. In the higher realms, psychic power makes it possible to serve humanity in ways which no undeveloped soul can accomplish."

"How do you cultivate psychic power?" asked the Student.

"Three elements are essential. First is the power of concentration. It is necessary to learn to hold one's inner attention single-mindedly upon any chosen objective, excluding everything irrelevant, and learning to become aware of all that is relevant. Second is the cultivation of dispassionateness. Third, one must acquire capacity to cooperate consciously with higher spiritual beings."

"What place has Christ in relation to these 'higher spiritual beings' with whom you seek to cooperate?" the Methodist asked.

"Personally, I would regard him as the master and leader of the whole spiritual enterprise," the Theosophist responded.

"I am sorry," commented the Biologist, "but I must say that all this seems to me to be extremely fantastic!"

"Here's one place where we aren't going to agree!" announced Workerson gleefully.

"It is not entirely fantastic," protested the Sociologist. "Take that business about spirits stratifying with others like themselves. That very thing happens, to a degree, in our daily life. There is the underworld of gamblers, racketeers, and vice purveyors. There is the university world. There is the group of people whose interests center in the church, the world of theatrical people, the world of cotton raisers. You might go on and name a long series of such worlds. The classifications are not hard and fast, but they are based on ethical attitudes, cultural interests, and perhaps more largely than we realize, upon trained power to use one's inner resources."

"Naturally," the Theosophist commented. "Our material universe is one of the infinite number of possible space-time worlds.

It happens to be the one in which our inner worlds intersect most fully. But it is merely one special case in the spiritual realms."

"Well, that spiritualistic stuff seems thoroughly dubious to me," remarked the Psychologist. "Of course, I would be the first to recognize the importance of training one's power of concentration. And I certainly believe in the value of enriching one's cultural background—and of course learning to cooperate willingly and gladly for the common good."

"All that goes without saying," agreed the Biologist. "If you want to build heaven on earth, I am in favor of it."

"Heaven on earth is what I want too," Workerson joined in. "But we have to have a bloody revolution before we can build a world where everybody serves the common good gladly and freely. First you have to liquidate the exploiters. You have to use force to take the power away from the beneficiaries of capitalism, and to make people do what's good for all the workers and the farmers. After you get the ideal system working, you can make it democratic. But I'll pass up that life-beyond-death stuff; I don't want my pie in the sky by-and-by; I want it now, for all the people who toil."

"But look here," insisted the Student. "We all agreed that the inner world is real. If you add telepathy to that inner world, you get practically everything the Theosophist has been talking about. And if that's right, then a lot of the things about the meaning of life begin to get clear. Anyhow, why not act as if it were so? Why not learn to cooperate for the joy of it? Why not discipline our minds so that we can live powerfully?"

"That is what a lot of us have been working at, in our quiet way, for a long time," remarked the Philosopher.

"Well, for me it's going to be a thrilling adventure, in an infinite spiritual world," retorted the Student.

What Place Have Purpose and Personality in the Universe?

"IS THERE ANYTHING to which a man of intelligence and integrity can pray?" asked the Unitarian. "We all agree, I take it, that we are part of a patternful universe. Reality is organized. It follows regular sequences which we call cause and effect. If we understand the sequences, we can weave the patterns of our lives creatively into the emerging patterns of our surroundings. But is the universe just something dead and indifferent—a vast, blind machine that grew up by chance? Or has it at its heart something that says 'I'—something to which we are so deeply akin that we can reach out in love and adoration, crying 'Abba, Father!'"

"Our Unitarian friend is raising a fundamental problem which we seem to have been dodging," remarked the Philosopher. "In our discussions we have come to the point of accepting the reality of both the outer world and the inner world, with the sensory world as a means of contact. Are the inner world and the outer world the same kind of reality or are they different? If they are the same kind of reality, they cannot both be merely matter, for we started with consciousness as our basic reality. That rules out the extreme materialistic solution of the difficulty. But if they are both of the nature of consciousness, how do you account for the continuing existence of the outer world when no human mind is thinking about it? If we all exist within one absolute mind, how do you account for the conflicts, inconsistencies, blunders, wastes and meaningless repetitions that form so large a part of reality? But suppose we say that the inner world and the outer world are basically different from each other. If so, how can thinking bring about changes in the outer world—for example, how can your thought result

in the sound-waves which emerge from your mouth when you try to express your ideas? And how can changes in the outer world affect our thoughts—for example, how can the sound-waves from your lips bring me new ideas? In other words, are we to be monistic idealists, dualists, pluralists, interactionists, parallelists, or what? Each of these positions embroils us in profound—”

“You know what the Christian Scientist said about that, don’t you?” Workerson broke in. “They asked her, ‘What is matter?’ and she said, ‘Never mind.’ Then they asked her, ‘But what is mind?’ and she said, ‘It’s no matter!’ ”

“I think we agreed to postpone any attempt to arrive at absolute truth in these conversations,” the Thinker observed. “We start with experience-patterns. They sort themselves out into groups which we can understand only if we take it that both the outer world and our inner worlds are real. Philosophical terms—such as ‘materialism’ or ‘idealism’—are tools to aid us in trying to understand experience. As tools, they are on probation. If they fail to help us in our task, shall we not abandon them and make new ones, even if the new ones are imperfect?”

Here the Student pulled the discussion back to its objective: “What I want to know is, what’s the best way to treat this outer world? Will I get along best if I look at it as a machine, or if I act as if it had a great Mind at its core, as my personality has a consciousness at its core?”

“Are there any limits which we can detect, between which the truth about this outer world must lie?” asked the Thinker.

“Limits?” the Student queried. “You mean setting up a kind of scale, with totally blind mechanism at one end, and completely purposeful consciousness at the other, and seeing if we can find any reasons to say, ‘Reality must be somewhere between these two points?’ ”

“Here is one limit for me,” the Unitarian observed. “This is the kind of a universe that brings forth beings that have inner worlds. It is a value-producing universe. No stone-blind mechanism could do that.”

“Human beings are hardly a justification for setting up a cosmos as vast as this,” objected the Biologist. “It seems prob-

able that the universe has been in existence for millions of millions of years—certainly it has been running for thousands of millions of years. *Homo sapiens* has probably existed for less than a million. Rather a small fraction that, for the crowning achievement of a universe like ours! And during most of this brief space in cosmic time, man's culture has not been much to brag about!"

"Does consciousness extend at all beyond human beings?" the Thinker asked.

"In deciding that other human beings besides ourselves are conscious, we applied the argument by analogy," the Psychologist reminded them. "If we apply the same argument to animals, we can hardly escape the conclusion that they also are conscious. Chimpanzees have eyes, ears, fingers, tongues, and other sense organs much like ours. The average college zoology student would accept the ape brain without question as that of a human child. Careful psychological experiments show that chimpanzees respond to very much the same ranges of sound waves and light vibrations as do men and women, and that they have capacities quite similar to ours in the way of telling the difference between red and pink, or between C sharp and C flat. Wolfgang Köhler, in his 'Mentality of Apes,' shows that chimpanzees exhibit signs of grief, loneliness, clannishness, sympathy, love, jealousy, gratitude, and of a sense of guilt, comparable to the signs which make us believe that other human beings experience these emotions. Chimpanzees organize group dances, make inventions, follow fads, and teach one another, even as do human beings, though in simpler degrees. If argument by analogy is good proof that other humans are conscious, the argument is almost as close and conclusive with respect to the consciousness of chimpanzees."

"But where do you draw the line?" Merchantson demanded.

"It is hard to find any line to draw. Dogs seem to have inner worlds—they show clear signs of purposive action, and when sleeping, they frequently bark feebly and make sketchy movements of the paws as if dreaming. Go on down the scale. Step by step, from the brain of a human to the brain of a fish, the close resemblances can be traced. Chickens distinguish much the same gradations of color that human beings recognize. Not

only human beings and white rats learn by trial and error, but even single-celled paramecia have been proven to do the same."

"Then I suppose trees and toadstools have consciousness," said Workerson ironically.

"Many biologists believe that they do."

"But wait," demanded Merchantson. "Has a crystal a kind of consciousness? Is there such a thing as the mind of a molecule? Does an electron know what it is doing when it jumps from one orbit to another?"

"What do you think?" retorted the Biologist.

"Come, come," protested the Methodist. "You aren't going to lead us back into the animistic superstition that every animal and plant imprisons a human consciousness, are you?"

"Obviously, the consciousnesses of animals must be different, in various degrees, from that of humans," the Psychologist replied. "A dog often understands simple commands, but most of our conversation fails to provoke any intelligent response from him. His sensory world is more full of smells and sounds, and vaguer in its sights than ours. If our dog, who is so close a friend and companion, lives in so different a stream of consciousness, what of the ant, the amoeba, or the giant redwood? If we humans have streams of consciousness, dogs may have rivulets, angleworms may have trickles, and amoebas may have drops. But these lesser flows undoubtedly differ immensely from ours, not only in quantity but also in quality."

"Then if the universe as a whole contains a superhuman Consciousness, you deduce that that Consciousness is likely to be very different from ours?" queried the Unitarian.

"Speculations of that sort go far beyond the range of science, but your conclusion seems a plausible one."

"Another bottom limit of cosmic consciousness can be put on our scale," the Astronomer reminded them. "Remember that the movements of the stars and planets, the orbits of electrons, the relationships of chemical elements to each other, and the transmission of all sensory messages, conform to the mathematics which man thought out (as he supposed) independently. Undoubtedly, many of the mathematical relationships of the universe we are only beginning to comprehend, or have not yet even glimpsed. Can you imagine this mathematical

structure to have been produced by an unintelligent mechanism?"

"I fail to follow you there," the Psychologist objected. "We have two facts: first, that the universe is permeated by mathematical relationships; second, that the human mind finds itself able to think into many of the relationships inherent in the rest of the universe. Those two facts may be open to many different interpretations."

"Why not put a few upper limits on the degree of intelligent purpose which we can assume for the cosmos as a whole?" suggested the Biologist. "Religious people have argued that the whole organization of the universe has been planned—that a Supreme Purpose has thought out the development in advance, with conscious foresight. On biological levels, at least, this assumption of foreseeing purpose not only is not needed to explain the facts, but is even inconsistent with the data.

"What causes the appearance of a new type of plant or animal? A change of this sort in the basic pattern of an organism is produced by a mutation—a fundamental alteration in the germ cell, which is carried forward thereafter through all subsequent cell divisions until a further mutation occurs. Now if these mutations were part of a foreseeing purpose, working intelligently toward higher and higher organization, most, if not all of the changes which occur should be for the better. But actual study of mutations in fruit flies and in other living things shows that the changes which occur are usually damaging or destructive. Most mutations make the organism incapable of developing, or of living, or of competing successfully in the struggle for survival. Only a few of these basic changes in organic pattern prove to be really beneficial to the species involved.

"The cause of mutations, according to the investigations of Dr. Hermann J. Muller and other biologists, is the change of atomic structure by radiation. Muller has been able to increase the frequency of mutations 150-fold by shooting at chromosomes with x-rays and with other types of radiation. These induced mutations, like the spontaneous ones, are apt to be damaging or even deathly to the individual involved, and only occasionally prove to be helpful improvements in structure.

Evolution has occurred because the mutations which proved feasible have been retained, and those which have been most helpful to existing structures have multiplied, on the whole, most rapidly, while the changes which were injurious have naturally tended to eliminate their possessors in the struggle for existence."

"Then nature tries out all the possible combinations, and hangs onto the ones that work, instead of figuring the thing out intelligently ahead of time, and trying only the best structures?" the Student ventured.

"You are still personifying 'Nature,' " the Biologist amended. "Put it this way: possible combinations in the development of living structures occur at random, under bombardment of the germ plasm by natural or artificial radiation. Some of the structures thus produced fit in with the general pattern of things well enough to go on functioning; others are destroyed by their own incapacity to integrate with the rest of life."

"Henry Fairfield Osborn disagreed with that—" the Philosopher began.

"Cultural evolution shows much that same tendency to go through a wide range of possible combinations, of which the ones which work successfully survive," the Sociologist interrupted. "Take marriage for example. Mankind seems to have tried practically all of the possible combinations in mating. There wasn't any supreme intelligence that 'in the beginning made the twain one flesh.' Or take religion. Man has worshipped stones, trees, snakes, fire, the sun, and practically everything else, at one time or another, including his own reproductive organs. He has tried orgiastic religions, devoted to intensifying and glorifying the passions, and ascetic religions, in which sex relations are regarded as defiling, requiring expiation. Monogamy and monotheism have emerged out of a trial-and-error process, which still seems to be introducing new changes.

"Or take the process of invention. Like mutations, inventions are merely combinations of preexisting units into new relations. These new combinations have to work successfully if they are to survive. Early man learned how to chip flint knives by a fumble-and-succeed process which stretched over

hundreds of thousands of years. He blunderingly learned the possible ways in which withes can be woven into wattled huts and baskets, blundered into lining his baskets with clay, fumbled into burning the basketry off from the outside of the clay, and thus discovered pottery. Step by step, the process has stumbled forward, by exploring combinations, and keeping the ones that worked."

"If inventions are blind accidental combinations, like mutations," the Unitarian asked, "how do you account for the fact that biological evolution took literally millions of years to develop such structures as wings and eyes, while man has invented airplanes and cameras within a few decades?"

"The modern human mind has developed a capacity new to the earth's history," the Sociologist replied. "Instead of mere blind fumbling, the scientific mind increasingly tries out the possible combinations systematically, with deliberate ends in view. Edison, in his laboratory, would define the elements in his problem exactly, and would then set up tens of thousands of experimental combinations, which would not have occurred by chance, in the fumbling process, during perhaps hundreds of years. Modern man can even try out preliminary experiments in imagination. Moreover, man has become aware of the laws underlying many kinds of phenomena, so that he can learn from a few experiments just what would result from an infinite number of others along the same lines."

"You might think of mankind as a sort of young giant, just waking up and getting clear consciousness, but still groping and blundering in the process," suggested the Student.

"But mankind is an integral part of the whole life process on this globe," the Sociologist reminded them. "Cultural evolution is simply a continuation and extension of the same forces which produced biological evolution. Your young giant rises up out of the stream of life-as-a-whole. His awakening consciousness is simply a clarification and a widening unification of the consciousness which has been emerging through lower forms of life."

"How do you mean, widening unification?" asked Workerson.

"Take the hundreds of thousands of people who read the Sunday New York Times," the Sociologist illustrated. "Can

you really think of them as self-sufficient individual minds, merely absorbing incidental information from that paper? Your organizing process has produced a unit of specialized and interacting minds, scattered over the globe. The stream of thought in which they participate is certainly far greater than any of the individuals that participate in it. And this New York Times mind is only an aspect of a far greater and more inclusive world-mind."

"You are almost giving us Fechner's theory of an earth-soul," smiled the Philosopher.

"But your young giant, rubbing his eyes as he emerges out of the darkness of past ages, exists within a framework of mathematical law which he did not create," the Astronomer insisted. "Even if we accept the struggling and emerging world-soul as the matrix within which our own existence takes place, we are still confronted with the question of the nature of the cosmic Being in which Earth lives and moves."

"Can't see any use in praying to that cosmic mathematician of yours," the Student remarked. "Whether HE is a set of habit-patterns in the Universal Mind, or whether IT is a stone-blind machine, the cosmic framework seems to be inexorably regular, and sublimely indifferent to the agonies of the human mites that spawn and die on our globular dust-speck."

"What kind of God would you really like, if you could have one to order?" the Thinker asked.

"Well, I'd like a God that cared when a fellow got into a terrible fix—a God that would do something about it!" the Student asserted.

"Want a celestial nurse, to follow you around, yanking you out of the way of the traffic, and giving you money to buy candy?" asked Workerson.

"Suppose an ideal father sent his son to college," the Thinker explored. "Just how much would you want that father to interfere when his son got into scrapes?"

"Not so as to keep him from growing into a man who could stand on his own two feet," the Student admitted. "But I'd expect him to do anything he could to save his son's life. Why shouldn't God intervene in extreme crises—when a fellow's on the verge of utter disaster?"

"You are sure he never does?" the Thinker smiled. "And you still think death an utter disaster?"

"Well, if God were a first-rate Father, I'd expect him to talk a fellow's problems over with him, and help him get some light on them," the Student insisted.

"You talk a good deal about the experimental method," broke in the Methodist. "Did you ever try the experiment of talking your problems over with God?"

"Have to believe he's there, first," retorted the Student.

"I did try it, earnestly—even frantically—for several years," said the Sociologist soberly. "It didn't work!"

"If there was a worth-while God in the universe, he'd certainly get busy on the cruelty, and the greed, and the slave-driving of this decaying so-called civilization," Workerson asserted.

The Thinker responded with a question. "Suppose God were to make you this offer: 'Tomorrow, if you so choose, I will send superhuman messengers to stand atop the Empire State Building in New York, the towers of Parliament in London, the Palazzo Venezia in Rome, the headquarters of Der Fuehrer in Berlin, the Imperial Palace in Tokyo, and all the other seats of power on earth. In my name they shall write my will in letters of fire upon the sky. They shall overthrow the mighty with irresistible power, and institute, now and forever, a reign of righteousness, in which no blundering, no pain, no exploitation, no want shall ever again be known within the world.' Would you accept the offer?"

"Dictatorship!" exploded the Sociologist. "That would be Calvin's theocracy with a vengeance. No one would dare resist. The new order would be coercive through and through. Only the hypocrites and the jellyfish could contentedly be bullied into submission under such a realm. It would be a repudiation of the alleged fatherhood of God. In such massive doses, coercion would obliterate freedom and destroy personalities—it would betray the very love which is supposed to be the nature of God."

"Oh, I don't know," Workerson resisted. "If God's a father, you ought to expect him to be paternalistic. After the exploiters had been liquidated, and the vested interests had been trans-

ferred to the workers, and world-wide economic planning had been established, the temporary dictatorship could be relaxed. Then you could have a permanent democracy—a classless society founded on labor values.”

“Has dictatorship been working out that way in Russia?” the Sociologist demanded.

“Well, that’s a matter of opinion,” retorted Workerson. “Besides, your divine dictator would never have permitted Stalin to overthrow Trotsky.”

“Deliver me from all your dictators, divine or communistic!” exclaimed the Psychologist fervently.

Approvals were murmured and nodded from all sides.

“Then your God really hasn’t any function at all,” the Student insisted. “He’s just a laissez-faire background for existence—a kind of spiritual matrix that doesn’t do anything except provide raw materials and scientific laws. Are you going to pray to that? You certainly can’t claim that that kind of God works purposefully in the world!”

“What do you mean by purpose?” the Philosopher asked.

“Well, if a divine purpose had been at work in the universe, social justice would have been fundamental in human history,” asserted Workerson.

“Then your idea of superhuman purpose is simply that things shall work out according to your human ideas of what is just and right?” quizzed the Philosopher.

“Purpose is personality projected into the future,” suggested the Sociologist.

“In what world does human purpose take its rise—the sensory, the world of inner images, the world of abstractions—or where?” the Thinker asked.

“Offhand,” responded the Psychologist, “I should say that purpose originates in a wordless and imageless sense of need or tension. Normally it begins to take form in general ideas. Later these ideas clothe themselves in specific images, or purposeful behavior-patterns, looking toward action in the sensory realm, to alter the outer world.”

“Then the essence of purpose is that it starts in what we have been calling the spiritual level of the inner world, and that it moves toward the outer world, growing more and more

specific until it results in action," the Student interpreted. "But what would you mean then by divine purpose?"

"A consistent philosophy might be built upon the supposition that every pattern of matter in the universe is the expression of a specific and specialized intelligence—that back of every crystal, flower, embryo, city, nation, invention, and culture there is a complex conscious image, which has emerged out of a conscious abstraction, which in turn has been born of a wordless and imageless spiritual Reality," suggested the Philosopher.

"A lot of those ideas of nature's don't seem to be very well worked out yet!" observed Workerson.

"We must conceive of them as emergent," the Philosopher stipulated. "Our universe itself, and particularly our world, seems to be in the process of exploring and perfecting relationships which are only in the process of development."

"That conception of matter as an expression of intelligence would fit well with the fact that stars and satellites conform to mathematical law," the Astronomer observed.

"It would be consistent with the facts about atomic structure, radiation, chemical organization, and so forth," agreed the Physicist.

"If you want to get mystical, I suppose you can apply that sort of philosophy to vegetable and animal phenomena," the Biologist admitted grudgingly. "That is what the vitalists are doing, more or less. Personally, I fail to see how the notion of a spiritual 'entelechy' back of a cell or an embryo serves any scientific purpose. I grant you that an organism displays coordination that goes beyond the merely mechanical. But what difference does it make whether you assume consciousness behind the coordination?"

"It makes a large difference in studying social phenomena," remarked the Sociologist. "You have to decide whether you will concentrate simply on the outer-world aspects of group life, or whether you will take into account their inner-world aspects—their values and purposes. An employer who treats his workers as if they were mere commodities or machines gets very different results from an employer who treats his workers

as if they were personalities, with conscious desires and ideas that need to be taken into account."

"But if you insist on going mystical," Workerson demanded, "what's the idea back of the crazy meanderings of human history?"

"What if the world was never intended to be a place where all the problems were solved, all the truth revealed, and all the injustices overridden?" the Thinker inquired. "Might it have been deliberately planned as a spiritual training school? Might the divine purpose have been to give to living things, and at length to mankind, an arena for adventure—to give to man the fullest possible opportunity to become free, creative, and God-like?"

"You have asked us many questions," responded the Student to the Thinker, "but you have told us little of what you yourself believe. What do you think is the Ultimate Reality?"

The Thinker paused. "God is the Spirit in whom I live and move and have my being," he said. "I sense him in the grandeur of this universe in which we dwell. I seek his purposes in the meanings of the human drama, with its tragedies and its conquests. I am aware of him in the high outreachings of the human spirit, reflected back to me in the potent symbols of printed pages, and in the living words of poets, prophets, dreamers, builders, revolutionaries and sages. But back of all these his garments, I find God in the realm of the spirit—in the reaches of the inner world beyond all symbols, forms, and words. That which says 'I' in me says 'I' in God, and that which says 'I' in God says 'I' in me. And that which says 'I' in you says 'I' in me and 'I' in God. So when, in the fellowship of search for truth, beauty and outflowing justice, comrade comes close to comrade, in love that has its roots beyond the body and beyond the mind, the Spirit of God surges up with a power and a glory unutterable."



PART III



The Fraternity of Truth-Seekers

"WELL, WHAT ARE you going to do about it?" demanded Merchantson.

"About what?" Workerson queried.

"Look at Stude's creed," Merchantson pointed out, "—his Creed of a Mechanistic Materialist!"

"It's pretty well reversed," the Student conceded. "I was banking on it that matter, one's body, and sensory experience are the things one can be sure about, and that consciousness, a future life and subjective values are illusory or unimportant. I've not really digested everything we've been through, but I begin to be pretty clear that consciousness is the core of reality, that the individual spirit survives bodily death, and that the unseen world—"

"Sounds like you're going religious on us!" Workerson interrupted.

"I'm looking for a way of life!" the Student insisted. "Call it religion, if you want to. It has to be real, it has to work, and it has to square up with a fellow's intellectual integrity."

"Religion is what we need to get away from if mankind is to achieve healthy personal and social life," the Psychologist suggested.

"What we need is a science of living," the Biologist agreed.

"What would you say to the suggestion that science is a religion?" queried the Thinker.

"Rot!" exclaimed Workerson. "Religion is the opiate of the people; science is the tool by which the proletariat is to plan mass production, win comfort and security for the people, and make the discoveries of the new age."

"Why not test the idea out?" suggested the Sociologist. "What would you say are the outstanding characteristics of a religion?"

"First of all, religions have gods," Workerson specified. "Well, science hasn't any god."

"Not an Old Man up in the sky, perhaps," the Student retorted. "But science nearly worships Reality."

"If scientists hunger to know Reality—if they devote themselves single-mindedly to coming into closer, more vivid and more creative relations with Reality, and to interpreting Reality to mankind, I should say that we might call that the equivalent to having a God," the Sociologist adjudicated. "What other essentials has a religion?"

"Christianity, at least, has worshiped an incarnation of God in human form," the Methodist remarked.

"If science has Reality for its God, then Truth is the incarnation of Reality—Reality in humanly comprehensible form," the Thinker suggested.

"Science tries to save the world by reconciling mankind to Reality through at-one-ment by the Truth," the Unitarian elaborated.

"And the Truth is crucified in the process," commented the Sociologist.

"Then the temples of science are the laboratories, libraries, museums and lecture halls," the Student recited. "The priests are the laboratory technicians, teachers, and lecturers. The Bible of science is made up of textbooks, logarithm tables, census reports, and all that."

"In other religions, prophets rise up every now and then, expose the weak spots, denounce the priests, upset the rituals, and bring the people back into more direct touch with God," remarked the Sociologist.

"Where can you find such a series of prophets as in science?" demanded the Student. "Look at them—Galileo, Newton, Harvey, Galvani, Pasteur, Curie, Einstein, Pavlov—you can go on and on. If those boys didn't upset the rituals of the scientific priests, I'd like to know!"

"How about martyrs?" asked the Sociologist.

"Plenty of science pioneers were put into prison—or even burned at the stake," the Student observed.

"And not only that," Merchantson supplemented. "Look at the people who lost their lives trying to work flying machines,

exploring the polar regions, experimenting with x-rays, and discovering the causes of yellow fever and meningitis!"

"Yes, but science doesn't pull off any miracles," protested Workerson. "It—"

"How about the miracle of establishing airplane lines all around the world?" the Student demanded. "And how about inventing things like grapefruit, and stamping out plagues like smallpox, and transplanting tissues from one human body to another, and—"

"All right, all right, call science a religion if you want to," Workerson conceded. "But how does that help on your problem of finding a way of life?"

"All great religions provide a way of life—a pathway of salvation," responded the Sociologist. "How about science?"

"Science more than any of them," argued Merchantson. "That's what applied science is. Rules on how to be healthy, how to increase your factory production, how to get rid of your neurotic complexes, how to plan a city, how to build a suspension bridge, how to teach kids quicker and more painlessly to do long division, and so on and so on—that's what science is for, to tell you how to live more successfully."

"Yes, and rules about how to bomb tenement districts, how to catch the sucker public and bleed it white, how to move your factories into low-wage areas—science tells all about that kind of thing too, if you ask for it," Workerson jibed.

"The thing that impresses me most about religions is the diseases which they develop," remarked the Biologist. "Religions get to be parasitical. The priests, or ministers, or church secretaries go into the work as a career. They get interested in how big an income they can get out of it. They get to playing politics, so as to grasp the best jobs for themselves and their friends. And all the while, they use pious talk about faith and duty—and even superstitious fears and threats—to get people to attend religious activities and to give, often out of miserable poverty, so as to keep the religious profiteers in easy livings."

"That isn't the worst," added Workerson. "The big boys of finance make their contributions so as to see to it that the church keeps the people contented with starvation wages and economic tyranny. Somebody said you can divide society into

three groups: the exploiters, the exploited, and the comforters and reassurers. That's where the religious racketeers belong—in the comforters and reassurers!”

“Science certainly is a typical religion on that score!” retorted the Student. “Look how inventions and discoveries are monopolized to build big fortunes! Look at the way college profs defend their jobs as vested interests, no matter how punk they are as teachers or researchers. And as for prostitution of religion to exploit ignorance and fear, pick up almost any magazine, or listen to almost any radio program, and you’ll find some advertiser using some supposed scientist to persuade people to buy something that won’t do them any good, or even something that’ll damage them.”

“The disease of religions that impresses me most is dogmatism,” observed the Psychologist. “The typical religionist says: ‘Here is the word of God, spoken exclusively to my Church. If you refuse our creed, you are either wicked or ignorant. Our group has a monopoly on divine truth. Anybody who tries to get into heaven any other way is a thief and a robber. Not long ago ninety-six Christian denominations, from thirty-three countries, sent representatives to a world conference. Here’s the way the leading liberal Christian weekly in America wrote it up—I kept the clipping as an exhibit:

. . . A conception of the church and of the gospel is emerging which exhibits Christianity as the only savior of the world. The Christian faith is being reaffirmed as the only reality. The whole body of secular philosophy is under condemnation for its unreality, and its ideology is set up as the antithesis of the Christian faith. . . . The conference is in an affirmative mood, ready to declare that the world has been tragically misled by those very forces of which it has been most proud—its science, its diplomacy, its material successes, its humanistic idealism. And ready to set Christianity as a faith and a way of life sharply over against every other proposal or procedure in which men have placed their hopes.

“Do people who call themselves scientists ever claim that they have the exclusive road to truth?” the Thinker asked.

“‘Nothing is real unless we have measured it; nothing is true unless we have proved it in our laboratories.’ That is the assump-

tion on which most of the behaviorists and positivists are working," the Methodist charged.

"Oh, come now," protested the Psychologist. "Isn't that rather an overstatement? A few pseudo-scientists may take that pose, but it surely is not typical of scientists in general."

"What has been the position of Bertrand Russell on that point?" the Thinker asked.

"He holds that science is the only method of discovering truth," explained the Philosopher, "and he argues that the subjective is beyond the reach of scientific research. That excludes from the realm of knowledge the inner world, and all ultimate values."

"When Bertrand Russell said that man and all his values 'are but the outcome of accidental collocations of atoms;' that nothing 'can preserve an individual beyond the grave;' and that 'all the labors of the ages, . . . all the inspiration . . . of human genius, are destined to extinction,' he was making as willful assumptions of unproved faith as any Christian who believes just the opposite," asserted the Unitarian.

"Perhaps Russell was carried away a bit by his enthusiasm," admitted the Psychologist. "But we certainly need some sort of antidote for the religious mystics. I have been collecting statements by 'illuminati' about their own absolute wisdom. Listen to the claims of an uneducated working woman—she's quoted approvingly by Hall in his 'Observed Illuminates': 'I saw, heard, and felt the whole truth of everything. . . . I saw, and understood, all life from its beginnings.' Edna St. Vincent Millay claimed almost the same thing in her apparently autobiographical poem, 'Renascence': 'I saw, and heard, and knew at last the How and Why of all things, past, the present, and forevermore.' But that same sort of claim goes right back into Christianity. The Apostle Paul asserted: 'The spiritual man can read the meaning of everything,' and John's gospel quotes Jesus as saying: 'The Holy Spirit, whom the Father will send in my name, will teach you everything. . . . When the Spirit of truth comes, he will lead you into all the truth.' Now it's perfectly obvious that these religious mystics are not infallible. If they were they would agree with each other, and actually they divide up into scores of antagonistic sects. To arrive at

truth, we must put up safeguards against all this subjective self-deception."

"Haven't we threshed this all out before?" the Student reminded them. "I thought we agreed that our swiftest advance into truth would come if we used all the resources of science to collect accurate and systematic data, and at the same time used all the insights, inspiration and illumination that can be found by meditation in the inner world."

"That is excellent, if the religious fanatics will refrain from claiming that they have all the truth directly from God," agreed the Psychologist.

"And if the positivistic fanatics will refrain from claiming that their test-tube and microscope data comprise the whole sum of reality," added the Physicist.

"Single-minded devotion to truth would make a marvelous religion if it could really take the whole of life for its field—inner world and outer world too," the Student pondered.

"That's just what Christianity is," testified the Methodist. "Jesus said, 'Ye shall know the truth, and the truth shall make you free.'"

"He also is quoted as having said: 'I am the way, the truth and the life. No one cometh unto the Father but by me,'" the Sociologist pointed out. "This truth he claimed—wasn't it exactly one of those exclusive and dogmatically authoritative revelations?"

"Who was it who said 'I am the truth'?" the Thinker asked. "Was it the Jesus personality—the Jewish carpenter's son? Or was it the conscious, superhuman spirit of truth and love, which used the fallible Jesus personality as a vehicle, and which is sometimes called 'the Christ Spirit'?"

"You mean that just as my conscious individuality uses my personality as a mask or vehicle, so the very essence of truth might have been conscious and made use of Jesus and the disciples, in spite of their blunders and defects?" asked the Student. "And you might just be devoted, with all your heart, to the Christ Spirit of Truth itself?"

"I prefer to give my loyalty to the Truth, without calling it Christ," the Biologist averred. "That is religion enough for me."

"No religion—and no philosophy of life—is going to be ade-

quate for me unless it can give me light on what is worthy of supreme devotion," said the Unitarian. "If science dodges the responsibility of dealing with values, I must seek beyond science for sources of inspiration, courage and faith."

"We've been agreeing for a long time that the quest for truth must take us into the inner world, and that values are more immediately real than atoms," the Student reminded him. "If the positivists think they have the title 'Science' copyrighted, I'm content to call myself a truth-seeker. All I want is to push on, in relentless and systematic exploration of reality, guarding myself as much as possible against sources of error, until the road of the rich life can be clearly marked, and I and all my fellow men can follow it."

"Bertrand Russell, even when he was denying that science can say anything about values, stated that science can discuss the causes of desires, and the means of realizing them," the Philosopher remarked. "If you explore exhaustively the causes of desires, and the means of realizing them, I wonder whether you will not have covered fairly fully the field of values which you have in mind."

"Now you're talking!" exclaimed the Student. "If science will search out the truth pioneeringly, on all levels of reality, we can get along with the job of building our better world, and find life thrilling in the process."

"Does the search for truth bring the seekers into unity with one another, or into conflict?" the Thinker asked.

"Unity," said the Student. "Look at that example the Astronomer gave about the prehistoric Mexicans discovering that a year has 365 and just the right fraction of days in it. They came into pretty close harmony with the ancient Egyptians, even if they didn't know it."

"Seems to me scientists spend a lot of their time scrapping with each other," Workerson objected. "They're always arguing which of them has the right theory. And jealous! Look at the big battles over who is entitled to credit for this discovery and that discovery. They want to get promoted into the big jobs. And they want to get famous so their books will sell, and so they can pull down a hundred dollars—or maybe five hundred dollars—per lecture."

"They cease to be true scientists when they let personal factors deflect their researches," protested the Biologist. "If a man really wants to serve science, he must become wholly indifferent about anything else except finding the truth. He must never be swayed a hair's breadth by the effects of his researches on his own finances or on his own promotion. He must be so indifferent to his reputation that he can admit his errors in complete candor and start afresh when the data call for it. He must be ready to go through drudgery, hardship, privation, obscurity, misrepresentation—and even his own blunderings—without flinching, with no other end in view except to render his fullest possible service to the truth."

"It's the spiritual transcending the personal!" exclaimed the Student. "Oh, you don't like the word 'spiritual.' What I mean is just that the truth belongs to the realm beyond words and beyond all forms. That's what the spiritual is, isn't it? The truth about the length of the year is the same whether it's written in Egyptian hieroglyphics or in Mexican pictograms. And it's that truth, beyond words and beyond personalities, that the real scientist is after. His personality mustn't get in the way. His body and his mind are to be just observation instruments and relationship perceivers, without any private emotions that warp what he sees or give him blind spots and biases."

"Suppose two impersonal scientists, working on the same subject, were to get together—say, two men or women working on some cancer problem. What would be their relationship?" the Thinker inquired.

"They would share results with the utmost freedom," replied the Biologist. "Whatever they could add to one another's insights would be promoting the process of discovery to which both are devoted, heart and soul. If their personalities were wholly out of the picture, as you are assuming, they should find it easy to develop a creative partnership."

"How does it feel to participate in that sort of research partnership?" the Thinker asked.

"It gives the most superb sense of teamwork and comradeship on earth!" burst out the Psychologist.

"But listen," the Student pressed on. "If two scientists, who have gotten beyond their personalities into the pure search for truth, enter into such a partnership, how about the whole network of the impersonal scientists, all over the earth? Aren't they actually working hand-in-glove with one another? Even if they never see each other, that doesn't matter, since their personalities are out of the picture. They get together on the only things that are vital to them by reading their professional journals, or digging up each other's technical reports. It's a kind of fraternity—a world-encircling fraternity of seekers after truth!"

"But suppose your impersonal scientist comes across some fact that will damage mankind terribly—some new death-ray, or some psychic power to drive other people crazy, or some new habit-forming drug that has no medical value—what does he do then?" Merchantson inquired.

"Scientists rarely have any power to tell what the ultimate social effects of their discoveries will be," observed the Sociologist. "The steam engine was invented to pump water out of coal mines, but it helped to precipitate horrible housing conditions in city slums. The——"

"Part of this impersonal attitude of the scientist must be complete detachment from any concern as to what use will be made of his invention," interrupted the Psychologist. "If truth is the set of intellectual tools by which man wins increasing mastery over his world, then the more truth the better, in the long run. If scientists try to decide what pieces of truth are wholesome and what ones are dangerous in the short run, they get clearly outside of their own specialties, and just make fools of themselves. What we have to give the world is dispassionate research into pure science."

"You're a swell bunch—you cold-blooded scientists!" denounced Workerson. "The world is ablaze and you sit back discussing the chemistry of flames. Who wants your 'unbiased truth'? You can't really be unbiased. You're all subsidized by the capitalistic system. What we want is the kind of truths that promote the revolution and build a classless world. We'll never get that with your pretended freedom of research. Let

the workers control the universities and the laboratories. Let the scientists serve the proletariat. And let's cut all this wishy-washy openmindedness!"

Merchantson reacted: "And suppose the capitalists, after they've heard that kind of thing often enough, decide: 'All right; you don't believe in free speech—neither do we, for reds like you. We're going to shoot all you radicals—or at least put you where you'll keep your mouths good and shut!'"

"The chemist can protect himself against bias by delicate weighing scales, by controlled experiments, and by exhaustive exploration," the Sociologist observed. "But the seeker for truth about social relations has a far more difficult task. He has to train himself to listen understandingly to those who disagree with him. He has to learn to search alertly for the data which refuse to fit his hypotheses. Knowing that truth lies beyond all words—that it must be wider than any ism or any cult—he holds his own theories tentatively, reaching out always for fuller wisdom. He seeks to discover and to develop that evolving body of working agreements on which, as it grows, more and more of humanity can unite and cooperate. To that end, within the fraternity of truth-seekers, the social scientist must labor at all costs to keep alive creative discussion and unhampered inquiry."

"And what will you do when the fascists stop your mouths?" asked Workerson.

"The Spirit of Truth was not born yesterday, nor will it die tomorrow," answered the Thinker. "There are some of us to whom the Truth is life and breath. Prison walls cannot shut it in, nor machine-gun bullets cut it short. To that eternal Reality we belong. The Truth shall set men free."

The Fraternity of Humanists

"THEN YOU ACCEPT science as your religion—omitting its diseases, of course?" queried the Unitarian.

"Highly successful, this science-religion!" remarked the Methodist. "Science taught men to ride the winds of heaven, so as to bring distant nations close to one another; and science taught men how to drop death out of the sky onto defenseless non-combatants. Science invented mile-spanning bridges, sky-scraping buildings, miracle metropolises; and science invented long-range artillery, to turn century-old cities into smoking ruins. Science taught men to run their assembly belts so fast and so efficiently that millions of willing workers were turned into unwilling paupers by being thrown out of work. Science produced overflowing surpluses, in the midst of which farmers and workers sank into impoverishment and misery." ("That's a preacher!" beamed Workerson, but the Methodist went right ahead.) "Science doubled the length of human life, and made men wonder whether life was worth living. Science has almost exterminated tuberculosis, and meanwhile perfected poison gases to make soldiers cough out their lungs. Science has perfected instruments of communication by means of which vast empires have come into existence, but it has not strengthened correspondingly the brother love needed to prevent fratricidal wars. Science has taught men power over the physical world, but it has not taught them how to live together, with quickening fellowship, in generous and loyal cooperation for the good of all. Are you offering science as a substitute for the religion of Jesus?"

"I've heard rumors that the religion of Jesus has been on the job for nineteen hundred years," Merchantson retorted. "Why blame science? Science has been on deck, really, for about three

hundred years, and it's just beginning to tackle social problems. Give it a chance!"

"This science-religion of which you speak is represented as single-minded devotion to truth," the Philosopher noted. "Let me raise a question: Is truth an end in itself, or a means to other ends?"

"I thought we all agreed that truth is a set of tools to help us grapple with experience," Merchantson replied, "—that is, all except the Astronomer. He enjoys it for its own sake, as I understand it."

"Can we not accept truth both as an end in itself, and as a means to other ends?" asked the Biologist.

"In so far as truth is a means to any other end except itself, how can it be the object of your supreme devotion?" the Philosopher inquired. "What is the end that is greater than truth?"

"That all men, everywhere, may grow fully, live richly, and enter into full partnership in the commonwealth of mankind," suggested the Unitarian.

"If the search for truth is pursued rigorously, for its own sake, will it not in the long run bring about exactly that result?" contended the Psychologist.

"Here's the way it actually works," the Unitarian countered. "Julian Huxley figured out that in England half the money that goes into scientific research is spent for direct industrial purposes. About half the remainder is spent on the military sciences. Social and psychological studies, on which the future of the race really depends, receive a meager portion out of the remaining quarter. Now if our real objective is setting mankind free for a richer and fuller life, why not set that goal frankly in the forefront of our thinking and planning? Out of the infinite number of problems which truth-seekers might study, why not select candidly for first attention those which promise to be most fruitful for human welfare? And why not direct special researches into discovering the causes why scientific findings are so often perverted into anti-social uses?"

"Many of the most fruitful discoveries would never have been made if that rule had been exclusively followed," the Physicist pointed out. "Radio, for example, could never have developed had it not been for a whole series of independent

researches into pure science, just for the sake of discovering the truth."

"Suppose research were being planned deliberately for human welfare," the Thinker suggested, "would it not be likely that far larger funds than at present would be set aside for research in pure science; also far larger amounts than at present for studies on urgent problems of social welfare, while much less than at present would be spent upon studies whose primary aim is to enrich individuals, or to increase the advantages of one group at the expense of the rest of—"

"You've talked a lot about agreements," Workerson broke in. "Now at last you're getting to a place where I'd like to see how far we agree. The Unitarian here says that our real objective ought to be working for a richer and fuller life for all mankind. Do we all agree to that? And do we really mean it?"

"Every true Christian must agree to it," the Methodist chimed in. "Jesus said that the whole law and the prophets are based on two great commandments. The second of these is, 'Thou shalt love thy neighbor as thyself.' Love means wanting your neighbor to have life, and have it abundantly. And anyone who is in need, and whom one can help, is one's neighbor."

"That agreement extends far beyond avowed Christians," the Sociologist put in. "Sincere Jews accept it; that second great commandment is quoted directly from the Jewish scriptures. The Buddhist scriptures say: 'Live on, for the good and the happiness of the great multitudes, out of pity for the world, for the good and the gain and the weal of men!' Hindu scriptures say: 'Thou shouldst perform acts looking to the universal good.' So also in the other great religions. But we can agree on this point without adhering to any of these older religions. Ben Reitman, famous anarchist, summed up his objectives as 'Building the better world,' and urged his hearers: 'Go on from here to do away with war, poverty, crime, and race prejudice.' Stanley Baldwin, conservative premier of the British Commonwealth of Nations said in his coronation broadcast: 'Let us dedicate ourselves to the service of our fellows, a service in widening circles, a service to the home, to our neighborhoods, to our county, our province, to our country, to the Empire and to the world!' The leading political parties now agree that they

are striving to provide for the common people the more abundant life. James Truslow Adams said not long ago: 'What is now generally considered the end or aim of modern government? Surely, it is to aid the citizen to lead the fullest and most satisfying life of which he or she is capable.' You have an agreement far wider than this group, Workerson."

"All right; fine! Now let me ask you another question. You say that the Fraternity of Truth-Seekers is made up of those who give themselves single-mindedly to the pursuit of truth. Well, how about a Fraternity of Human Brotherhood, devoted wholeheartedly to achieving a richer and fuller life for all the people who need it most? Are you ready to join up?"

"That is the very thing that the Kingdom of Heaven is," agreed the Methodist. "We keep holding up that vision. We keep falling short of it, but that ideal is the way of life to which we ardently seek to attain."

"I prefer not to call it the Kingdom of Heaven—not for myself, anyhow," the Physicist stated. "But I believe most of us, in our best moments, are ready to give ourselves unreservedly to working for the richest and fullest life attainable for all men. For some of us our contribution has to be in the form of scientific teaching and research rather than direct social reform, but we keep coming back to the great ideal, and trying to true up our lives to it."

"Did you see the 'humanist manifesto,' issued by John Dewey and a long list of other eminent people in 1933?" the Classicist asked. "Let me read you part of it":

Religion must formulate its hopes and plans in the light of the scientific spirit and method. . . .

Religious humanism considers the complete realization of human personality to be the end of a man's life, and seeks its development and fulfillment in the here and now.

In place of the old attitudes involved in worship and prayer the humanist finds his religious emotions exprest in a heightened sense of personal life and in a cooperative effort to promote social well-being. . . .

The goal of humanism is a free and universal society in which people voluntarily and intelligently cooperate for the common good.

"All right," Workerson pushed on. "Let's assume that two people, wholeheartedly dedicated to building the better world, come together. Just like the single-minded truth-seekers. They ought to be able to agree with each other and to work as partners. They're both devoted to achieving the richer life for those who need it most. Now it's perfectly obvious who it is that needs a better break—it's the workers and the poorer farmers. They're not getting enough income to feed their families decently, let alone getting enough to have all the finer things like culture and leisure and art and literature. And why not? That's perfectly obvious too. It's because the power is in the hands of the property-holders. Naturally they run things for their own private benefit, regardless of who gets starved, or smashed up in the machinery. And privilege-holders never give up their soft berths until they're thrown out by the neck. You Christians say you believe in the brotherhood of man. All right, here's the test for you. Will you go the whole distance? Will you risk your own safety and security and sheltered comfort in order to fight for the rights and the abundant life of the workers down in the tenements and the factories and the wharves and the mines——"

"Say, Workerson, you're crazy!" broke in Merchantson. "I'm just as keen as you are about a more decent world. But you're all wrong on method. A good share of all the employers are doing their best to provide more work, at better wages and shorter hours. Laborers earn more than twice as much as they did a hundred years ago, in terms of food, clothing, housing, and luxuries. 'Take it away from the rich, and give it to the poor'—that's your motto. And if you succeed, all you'll do is to wreck the whole industrial system so nobody will have enough to eat or a chance at security. Look at——"

"You radicals keep appealing to violence," the Unitarian interrupted. "Don't you see that violence plays right into the hands of the people who hold power? You're just asking for fascism. What will happen to this better world we all dream of if everyone goes around in deadly fear lest he be taken out and shot, or sent to rot in a concentration camp——"

"Give the scientists a chance," broke in the Biologist, "and we'll make food, clothing, housing and luxuries so abundant

that we shan't have to quarrel over how to divide the national income. Take agri—"

"You'll produce surpluses all right, and then the capitalists will burn them up, or plow them under to keep them from bringing down prices," Workerson came back.

"How about giving the social scientists a chance to work that out?" retorted the Biologist.

"What a wonderful fraternity we're developing!" the Student laughed. "Why doesn't it work?"

"Workerson specified wholehearted devotion," the Thinker reminded them. "What does that imply?"

"It means not letting your own vested interests and prejudices stand in the way," Workerson asserted. "It means putting the new social order first, and sinking all your own personal wishes out of sight."

"That's like single-minded devotion to truth-seeking," the Student observed. "You have to rise to the spiritual level. One's personality has to become wholly an instrument of one's spirit."

"Your specific programs of reform or revolution," asked the Thinker, "—are they part of your spirit, or part of your expanded personality?"

"They're part of the personality," the Sociologist answered. "One identifies oneself with a movement—one uses it as a kind of annex to oneself—a vehicle for self-expression."

"But communism isn't just my personal program," Workerson pointed out. "My personality is sunk in the cause. Millions of people share this same pattern for rebuilding civilization. How are you going to build a better world unless you have a program?"

"It has to be a program on which humanity as a whole can more and more unite," the Student noted.

"That's just it," Workerson insisted. "Communism is just that. It's inevitable. Capitalism is decaying so fast, its collapse is just a question of a few years. The workers are awakening and organizing everywhere. They're bound to take over the power. When they do, and when they operate the whole productive and distributive system for the common good, that'll be communism."

"There is a much older and sounder program than that for

rebuilding the world," the Methodist minister remarked. "It is based on love, not on force. It is called the Kingdom of Heaven on Earth. Because God himself, and all the tides of power in the universe, work for that consummation, it is inevitable that sooner or later it will conquer the—"

"Sometimes I hope somebody will really try out Christianity," Merchantson broke in. "It's a great idea. But the system which has really worked is capitalism. Labor troubles and impractical socialistic experiments are old, old stories. Private initiative and free competition—that's the program which is really sweeping the world."

"Capitalism is just a phase—a very imperfect phase—of evolving technology," countered the Biologist. "It is science which underlies our emerging civilization. That will become triumphantly clear in the next few decades. Let the reformers amuse themselves—the laboratory will tell the story!"

"There you have it," commented the Student. "We all want an ideal world where everybody can live fully and thrillingly. Workerson is sure it will be attained by communism. The preacher here says he's sure it will come through the Kingdom of Heaven (Methodist brand, *nicht wahr?*). Merchantson stanchly looks forward to the increasing triumph of competitive initiative, and the Biologist foresees the fabrication of a new world by perfected technology. If we had a fascist here, he'd fast enough tell us that the totalitarian state is the program that will win out for the next thousand years. What shall we do—sit back and watch the crusaders fight it out?"

"When you put it like that, it seems kind of silly to be so sure one's own group has the whole truth," mused Merchantson.

"Wait a bit!" the Student burst out. "It's the same story over again. We're still seeking the truth, only now we're talking in terms of applied methods to achieve the goal on which we're all agreed. The Fraternity of Humanists is just an extension—a kind of development—of the Fraternity of Truth-Seekers. Back of all our divergencies, we're seeking common programs of action—the programs that emerge when open-minded men, devoted to human fulfillment, attempt to put aside personal self-seeking, to learn from one another, to ally themselves with the creative processes of the universe, and to bring into

fuller and fuller realization a world of brotherhood and freedom."

"Well, I'll stick to communism!" Workerson insisted.

"Perhaps the abundant life for you requires that you function as a crusader," the Thinker commented. "Many men rise to the heights of self-dedication only through devotion to some holy cause, regarded by them as the exclusive revelation of the ideal. But others, watching the various crusades war against one another, seeing the ways in which they set up barriers against mutual understanding, and how they neutralize each other's strength by combat, may seek behind the battling forms the ideal from which they sprang. Such men may come at last to give their heart and soul and mind and strength to serve Brother-Love itself, toiling unflinchingly to bring into being the universal patterns, through which men may unite and rise above their battles into the realization for which they had blindly fought. In the name of freedom, each man must choose his own path. May courage and high fellowship go with you, whatever your choice."

The Spiritual Fraternity

A BELL RANG. "All this is highly stimulating," said the Philosopher. "But after all, we must keep the routine of the cruise operating. Thank you, sir, for taking part in these informal conversations." He rose to go, and all the company, with sundry stretchings of cramped limbs, and tag-end controversies over pet points, wandered out of the salon. All except the Thinker, and the Student.

"You are not satisfied," the Thinker observed. "Do you regard the Fraternity of Truth-Seekers and the Fraternity of Humanists as real, or as mere figures of speech?"

"They're real, I suppose," the Student responded. "After all, there must be hundreds of thousands of people who catch glimpses, at least now and then, of what truth might do for the world if we all followed it single-mindedly. And there must be hundreds—maybe thousands—who actually keep trying to put all they've got into finding the truth and giving it to men. Regardless of whether they have any formal organization, I can see you're right that these single-minded seekers of truth belong to a community that is tremendously real. They have a common heritage and a common purpose. In the inner world they have a fellowship with one another which is superb."

"Would you say the same thing of the Fraternity of Humanists?"

"When you come to that," mused the Student, "the number of people who at times catch glimpses of the meaning of universal brotherhood must run into the millions. They're split up by nationalistic, and religious, and intellectual antagonisms. But there must be tens of thousands who keep trying, with all they can put into it, to work for a world community where everybody can live keenly. And I can see the possibility

of these social idealists coming into closer and closer working relations, in what would be a real world fraternity."

"Yet you are not satisfied to ally yourself with either of these fraternities—or with both?"

"It isn't that I object to what they're driving at," the Student explained. "I agree—no, that's not strong enough—I can see something of the splendor of these groups that are emerging in humanity, and of what they're working toward. But it seems to me that they're just kidding themselves if that is as far as they go. What's life all about? What's the meaning of the whole process? That's a big question—you can't escape it—and humanism doesn't answer it. Somehow I can't throw myself, exultantly, into any movement that shuts its eyes to the greatest issues of all. You, and some of these other fellows, led us through a line of thinking that seems to point pretty strongly to the belief that a fellow goes right on living after his physical body dies. Well, the humanists are dodging that. They get kind of flustered and irritated if you bring it up. And then, you really got me when you told about what God means to you—all that about the Spirit in whom you live and move and have your being. But there again, you seem to think that God has sort of set the stage in the world for a great drama, and then gone off and shut himself away for fear men wouldn't be free if they saw him too plainly."

"We've been dividing up our experience-patterns into different levels—the outer world, the sensory world, the world of inner images, the world of abstractions, the world of pure spirit. On which of those levels does the drama of life take place?" asked the Thinker.

"Why, on all of them, I should think," the Student answered.

"If God refrains from making himself a dictator in the outer world and the sensory world, does that mean that he is inaccessible in the inner worlds?" the Thinker queried.

"Oh, then part of the drama might be that some men became aware of God in the world of pure spirit, and tried to bring that discovery into realization in the world of abstractions, and of inner images, and of sensory communication."

"And who are the men who have been working at that task?"

"Well, Akhenaten, Buddha, Socrates, the Hebrew prophets, Jesus, Paul, St. Francis, and I suppose a long list of people like that. But look how they disagree with each other! They certainly weren't very unanimous about the God they were trying to reveal to humanity. And if you think I'm going to take Jesus of Nazareth for my supreme authority, you've got another guess coming! I took a course on 'The Bible as Literature' for a snap, once, and I had to read the Gospel of Mark all at one sitting. Well, whoever wrote that book certainly expected Jesus to come back in his own generation, visibly, in the clouds up in the sky, with all-conquering power. And when I brought the question up in class, the prof agreed that practically all the New Testament writers thought that same thing. Looks to me as if Jesus himself thought it. But anyhow, even if he had been perfectly wise back then, it all happened a terribly long time ago. You can't tell me that the final word on the meaning of life and on how to build a world community was put down once for all more than a thousand years before the scientific method had really been born. You can't tell me that all of human thinking, and all the evolution of culture for the last nineteen centuries have nothing vital to add to what Jesus said about God, and eternal life, and human relations."

"What was it that you were saying, a few minutes ago, about the relation between Jesus and the Christ Spirit?" the Thinker reminded him.

"You mean that about Jesus being a human personality, who made himself available to become the vehicle of the Christ Spirit of Truth and Brother-Love?" the Student recollected. "Yes, you're right. That would clear it up. The Jesus personality must have been a product of his own day. He didn't know a thing about modern science. He was a young Jewish idealist, who followed the pattern of the Hebrew prophets. The whole framework of his mind was built out of ancient Jewish thought. But he changed the world because he let the creative power of the spirit stream through him. Wait a minute! If he could do that in his day—with all the ignorance and superstition there were all around him—what could a man do today if he gave his personality with that same devotion, and could build besides on all the achievements of the Fellowship of Truth-Seekers?

Maybe religion might leap forward in the next century in the way that technology has leaped forward in the past century. Perhaps the great days of religion might be in the future instead of in the past!"

The Thinker nodded. "It is reported that Jesus said: 'He that believeth on me, the works that I do shall he do also; and greater works than these shall he do; because I go unto the Father.' "

"But look here!" the Student objected. "Jesus may have made a lot of mistakes, but where is there anybody today who has anywhere near the spiritual power that flowed through him?"

"What is needed today?" the Thinker asked him. "Should one transcendent and miraculous spiritual leader emerge among men? Or should great numbers of personalities, varied in their special abilities, scattered through many nations, races and religions, and all devoted deeply, become vehicles for a new tide of the spirit, lifting mankind to new vision and to a new order of life in the world? Everywhere I go, I keep meeting men and women whose eyes shine with this faith, who are bringing their lives rigorously into alignment with the Master-Pattern as they perceive it, and who are pouring the power of the Spirit into building brotherhood as a living network, permeating the world."

"You mean another and greater fellowship, made up of those who are devoted not only to truth and brother-love, but also to the spiritual realities of which they have begun to be aware?" the Student queried. "And you mean that Socrates, and Jesus, and all the great illuminated leaders of the past, have been building this Fraternity of the Spirit?"

"Any two people who share experiences, and who are in harmony with one another, enter more or less into each other's consciousness," the Thinker pointed out. "You and I, for instance, have built together shared memories and shared purposes. Even that partial merging of two selves is joyful. The deeper and more complete the sharing, the more rapturous the experience. It is that which underlies all that is imperishable and undyingly radiant in love. But this community of consciousness need not be confined to pairs of people. Any fraternity of

kindred spirits, working together for common ends, brings into existence a spiritual reservoir in which they all participate. This even happens, in a limited and self-destroying way, in antisocial groups, like gangs of criminals, or predatory nations. What is it that comes to pass, then, when men awaken spiritually, and give themselves with all their being to the service of truth, beauty, love and outgoing justice? In these, all men can more and more unite. These are but aspects of the Creative Spirit which pervades the universe. Hence any man or woman submitting himself to that Spirit—submitting in full surrender of his personality, and in complete acceptance of all the arduous discipline required for the task—finds that he has become a member of the Blessed and Beloved Community, the Kingdom of Eternal Brotherhood. By that act he enters into the spiritual heritage of all the ages. That which was beautiful and brave in the religion of Akhenaten, that which was true and imperishable in the conversations between Socrates and Plato, that which had enduring power and serenity in the teachings of Gautama to his disciples, that which is immortally lovely and world-transforming in the fellowship of Jesus with his followers—all this is yours if you give unreserved allegiance to the Fraternity of the Spirit."

"But," the Student protested, "how can the world be saved by any such process? How many will there be who will pay the price, and win the self-mastery, and find the communion?"

"A narrow gate, into a straitened way, and few are they that find it," the Thinker reminded.

"But what can be done by such a small minority, against all the hatred and greed of a disintegrating world?" protested the Student.

"If that which says 'I' in you is, at long last, the very same Spirit who says 'I' in every other human being—the 'I' that has been coming to consciousness through all of history and all the evolution of life on this planet—then the destiny of mankind focuses in every member of this Brotherhood. Whatever you achieve, mankind has begun to achieve. Wherever mankind fails, you still are failing. If in your life Love becomes powerful, then Love has found one more opening into the life of humankind. If through you Truth speaks bravely and

wisely, the Truth, with immortal power, will go on ringing through the lives of countless men. One match can set the forests of a mountain range ablaze."

"Not only love, but also hate—not only truth, but also war—blaze up like fire," the Student noted.

"And members of this Fraternity must bear a portion of the suffering, commensurate with their own sharing in the life of all mankind," the Thinker answered. "But tell me this: For your life's destiny, which one is crucial—that all the problems of society be solved (leaving fresh problems, of a newer crop, yet to solve)? Or that you live heroically, in high fellowship, with open eyes, seeing increasingly the meaning of the drama which unfolds on this stupendous stage called earth?"

"In practical terms, doesn't that reduce pretty much to the same thing as belonging to the Fraternity of Humanists?"

"That is something which each of us must test for himself," the Thinker returned. "My own experience has been this: Over and over, when I have entered into the world of the spirit through meditation, reaching out to superhuman wisdom and power, I have found guidance and new vitality. Words that have altered my whole life have been spoken to me, in the inner world, as though by the voice of some heavenly messenger. Courage to face apparently insuperable difficulties has been given me over and over again, triumphantly. Out of turmoil and doubt there have emerged enduring serenity and peace. Unfailing verification in actual experience has given me the knowledge that whatever my needs may be—for resources, protection, guidance or power—so long as I serve the Fraternity of the Spirit, those needs will be met."

"But how can I be sure of these things?" the Student demanded. "You offer me hypotheses about God, probabilities of life after death, likelihoods that a spiritual brotherhood exists which will use me and defend me. How can I know for certain?"

"When I met you first, you were on the verge of leaping into a volcano," the Thinker reminded him. "Life seemed to have reached bankruptcy. Why not start from that fact? If your former skepticism proves to have been valid, you will sink shortly into eternal forgetfulness. It will have done no

harm to have staked your worthless life upon false hopes. But if the Fraternity of the Spirit is real, as I have found it, and as the greatest seers of the ages have proclaimed, then this venture will lead on into the beauty, the power and the glory of existence. An heroic gamble, if you like. But why not throw yourself into the Great Brotherhood instead of into the crater? If no such Fraternity has existed hitherto, let it at least begin now!"

"What must I do, then, when you go away, and I take up the task?" the Student asked.

"That is for you to tell me," the Thinker responded.

The Student sat for a long while, with unseeing eyes. Then he said:

"I must cultivate the power to share the consciousness of my fellow men; I must learn to enter their experience through their words, their smiles, their doubts and their struggles; more and more I must acquire the skill to comprehend life as they perceive it from their inward viewpoints, but holding to whatever perspective of my own may help illuminate their worlds.

"I must be sensitive to discover my brothers of the Great Fraternity—my elder brothers who so often stand unnoticed, ready to lead me onward if I catch the shining of their eyes and the swift stirring of their inspirations; and my younger brothers who so often with anguish and with longing seek for the clue which I might give them to the path that leads toward the heights.

"I must build up my inner power of attention, till I am wholly master of myself in the great world of pure ideas and of the spirit—wider and wider awake, and aware of the realities beyond the senses.

"I must become dispassionate—unwarped by body-centered passions and undeflected by self-interest, learning how to comprehend existence from the viewpoint of the cosmic Master Dramatist.

"I must keep open and keep widening the channel of communication which brings unfailing light and strength from sources higher than my comprehension.

"I must learn to base the illuminations of the spirit on systematic masses of facts, and test the flashes of intuition by rigorous verification.

"I must keep embodying the insights of the spirit into the flesh and blood of daily living, that brotherhood may be no empty word or false pretense, but actual in all the patterns of the life I live and share."

The Student raised his eyes, but the Thinker was no longer to be seen.

An Annotated List of Books Related to The Skeptic's Quest

- BENTLEY, W. A., and HUMPHREYS, W. J., *Snow Crystals*. 227 p. McGraw-Hill, 1931. Over 2,000 microphotographs of snow crystals.
- BOISEN, ANTON T., *The Exploration of the Inner World: A Study of Mental Disorder and Religious Experience*. 332 p. Willett, Clark, 1936.
- BRANDE, DOROTHEA, *Wake Up and Live!* 198 p. Simon and Schuster, 1936. A best-seller, telling of the transforming effects of cultivating the inner world.
- EDDINGTON, ARTHUR S., *Science and the Unseen World*. 91 p. Macmillan, 1929.
- FERM, VERGILIUS (Editor), *Religion in Transition*, by S. Radhakrishnan and others. 266 p. Macmillan, 1937. With exalted spiritual idealism, the authors depict their visions of the new religion of humanity. Accepting no spiritual monopoly on truth, they recognize God as a Creative Power, and mankind as an integral whole.
- FODOR, NANDOR, *Encyclopaedia of Psychic Science*. 416 p. Arthurs Press, 1933. Nine hundred brief articles on spiritualism and psychical-research topics and personalities, by a sympathetic and somewhat scholarly writer.
- HALDANE, J. B. S., *Materialism*. 221 p. Harper, 1933. "A universe outside of our own experience, and therefore outside personality, has no ultimate meaning for us. . . . (The) physico-chemical, biological and psychological or spiritual worlds are only the same worlds at different planes of interpretation." Thus writes this great biologist.
- HART, HORNELLE, *Living Religion*. 260 p. Abingdon, 1937. An approach to meditation and the meaning of life from the standpoint of people acknowledging the Mastership of Christ.
- , *Technique of Social Progress*. 708 p. Holt, 1931. An exposition of the pattern-producing process at work in social evolution.

- HARTSHORNE, CHARLES, *Beyond Humanism*. 338 p. Willett, Clark, 1937. "The whole treatment of religion (by this author) is in terms of human science and philosophy. . . . For Professor Hartshorne the world is alive to its microscopic depths, and the ultimate electrons are active and sensitive. . . . The whole universe together constitutes an individual which has personality and is God."
- JEANS, JAMES, *The Mysterious Universe*. 163 p. Macmillan, 1931. A great astronomer reviews the bearings of recent advances in physical science upon the problems of philosophy, and concludes that the maker of the universe must have been a mathematician.
- JOAD, CYRIL E. M., *Guide to Philosophy*. 592 p. Random House, 1936. One of the clearest, most readable summaries ever written of the problems of philosophy and of the findings of leading thinkers in that field.
- MAETERLINCK, MAURICE, *Pigeons and Spiders*. 128 p. W. W. Norton, 1936. "Nature anticipates man's most complex inventions, yet constantly blunders, as if its intelligence were as fallible as man's. Is there an intelligence that pervades all life, a reservoir to which everything returns, from which nothing is lost and to which nothing can be added?"
- MONTMASSON, JOSEPH-MARIE, *Invention and the Unconscious*. 338 p. Harcourt, Brace, 1932.
- MULLER, H. J., *Out of the Night: A Biologist's View of the Future*. 128 p. Vanguard, 1936. If man evolves, society must evolve too. It is the human race and the planet that count, rather than nations and countries. Vitalism is sheer mysticism; control is to be attained through mechanistic methods. Humanity demands a complete abnegation of self and of all that is implied by "rugged individualism".
- MYERS, FREDERIC W. H., *Human Personality and Its Survival of Bodily Death*. 307 p. Longmans, 1936. A condensed edition of one of the great classics of psychical research; a comprehensive survey of that field, as seen a generation ago by the man who gave to psychology the concept of the subconscious.
- OVERSTREET, HARRY A., *The Enduring Quest; A Search for a Philosophy of Life*. 277 p. W. W. Norton, 1931.
- RHINE, JOSEPH BANKS, *New Frontiers of the Mind*. 275 p. Farrar, 1937. Records the experiments on extra-sensory perception (telepathy and clairvoyance) carried on for the preceding seven years in the parapsychological laboratories at Duke University.

- RUSSELL, BERTRAND, *Religion and Science*. 256 p. Holt, 1936. A well-known philosopher shows how, as he conceives it, the advances of science have driven back religion.
- SCOTT, CYRIL, *An Outline of Modern Occultism*. 240 p. Dutton, 1935. This book may serve as a gateway into a vast and obscure field. This—and all other books of this type—should be read critically.
- SOROKIN, PITIRIM A., *Social and Cultural Dynamics*. Four Volumes. American Book Co., 1937. A monumental analysis of cultural evolution. His studies of "Fluctuation of Systems of Truth," (Volume 2) and "Fluctuation of Social Relationships," (Volume 3) are particularly pertinent.
- WIEMAN, HENRY NELSON, *Methods of Private Religious Living*. 219 p. Macmillan, 1929. God as the Integrative Process at work in the universe; suggestions of practical methods for developing creative harmony with the Supreme.
- WOOD, ERNEST EGERTON, *Concentration, A Practical Course*. 172 p. Theosophical Press, 1926. One of the most widely used hand-books for the training of the inner mind.
- , *Is This Theosophy . . . ?* 318 p. Rider, 1936. A fascinating autobiography of an insider, explaining his disillusionment, yet intimating a degree of continuing faith.

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